1993-09

Cost savings and benefits associated with naval aviators within the C-9 community of the Naval Air Reserve

Mullarkey, Christopher J.

Monterey, California. Naval Postgraduate School

NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

COST SAVINGS AND BENEFITS ASSOCIATED WITH NAVAL AVIATORS WITHIN THE C-9 COMMUNITY OF THE NAVAL AIR RESERVE

by

Christopher J. Mullarkey

September 1993

Thesis Principal Advisor: Doug Moses
Thesis Associate Advisor: Jeff Nevels

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	23 SEP 93	MASTER THESIS

4. TITLE AND SUBTITLE
COST SAVINGS AND BENEFITS ASSOCIATED WITH NAVAL AVIATORS WITHIN THE C-9 COMMUNITY OF THE NAVAL AIR RESERVE

5. FUNDING NUMBERS

6. AUTHOR(S)
MULLARKEY, CHRISTOPHER, J.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
NAVAL POSTGRAOUATE SCHOOL
MONTEREY, CA 93943-5000

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES
THE VIEWS EXPRESSED IN THIS THESIS ARE THOSE OF THE AUTHOR AND DO NOT REFLECT THE OFFICAL POLICY OR POSITION OF THE DEPARTMENT OF DEFENSE OR THE U.S. GOVERNMENT

12a. DISTRIBUTION/AVAILABILITY STATEMENT
APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

12b. DISTRIBUTION CODE

13. ABSTRACT (*Maximum 200 words*)

THIS STUOY QUANTIFIES THE ANNUAL PAY AND ALLOWANCE COST SAVINGS ASSOCIATEO WITH SELECTIVE RESERVE PILOTS EMPLOYEO WITHIN THE C-9 COMMUNITY OF THE NAVAL AIR RESERVE. THE PRESENT METHOO OF COMBINED ACTIVE OUTY ANO RESERVE PILOT MANNING OF THE C-9 COMMUNITY IS COMPAREO TO THREE HYPOTHETICAL ALL ACTIVE OUTY MANNING SCENARIOS TO OETERMINE AGGREGATE COST SAVINGS. A OAYS OF PAY MOOEL IS OEVELOPEO ANO USEO TO OETERMINE THE AVERAGE ANNUAL BASE PAY COST OF SELECTIVE RESERVE C-9 PILOTS ANO BASE PAY COST SAVINGS ASSOCIATEO WITH SELECTIVE RESERVE MANNING OF C-9 SQUAORONS. AOOITIONAL ANALYSIS QUANTIFY COST SAVINGS ASSOCIATEO WITH BASIC ALLOWANCE FOR QUARTERS, VARIABLE HOUSING ALLOWANCE, BASIC ALLOWANCE FOR SUBSISTENCE, CAREER INCENTIVE PAY, ANO RETIREMENT PAY. FURTHER ANALYSIS IS PRESENTEO PERTAINING TO THE AVERAGE ANNUAL FLIGHT TIME BENEFITS WHICH ARE GAINED THROUGH SELECTIVE RESERVE C-9 PILOTS WHO ARE AIRLINE PILOTS. AREAS FOR FURTHER STUDY ASSOCIATED WITH COST SAVINGS PERTAINING TO SELECTIVE RESERVE PILOTS ARE SUGGESTED.

14. SUBJECT TERMS	15. NUMBER OF PAGES
SELECTIVE RESERVE, TAR, SELRES, C-9, NAVAL AIR RESERVE, COST BENEFIT ANALYSIS, BASE PAY, BAQ, VHA, ACIP, BAS, RETIREMENT PAY, ACTIVE DUTY,	126
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UL

Approved for public release; distribution is unlimited.

COST SAVINGS AND BENEFITS ASSOCIATED WITH NAVAL AVIATORS WITHIN THE C-9 COMMUNITY OF THE NAVAL AIR RESERVE

by

Christopher J. Mullarkey
Lieutenant Commander, United States Naval Reserve
B.S., University of South Carolina, 1980

Submitted in partial fulfillment
of the requirements for the degree of

MASTER OF SCIENCE IN FINANCIAL MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
September 1993

ABSTRACT

This study quantifies the annual pay and allowance cost savings associated with Selective Reserve pilots employed within the C-9 community of the Naval Air Reserve. The present method of combined active duty and reserve pilot manning of the C-9 community is compared to three hypothetical all active duty manning scenarios to determine aggregate cost savings. A Days of Pay Model is developed and used to determine the Average Annual Base Pay Cost of Selective Reserve C-9 pilots and Base Pay Cost Savings associated with Selective Reserve manning of C-9 squadrons. Additional analysis quantify cost savings associated with Basic Allowance for Quarters, Variable Housing Allowance, Basic Allowance for Subsistence, Career Incentive Pay, and Retirement Pay. Further analysis is presented pertaining to the Average Annual Flight Time Benefits which are gained through Selective Reserve C-9 pilots who are airline pilots. Areas for further study associated with cost savings pertaining to Selective Reserve pilot manning are suggested.

TABLE OF CONTENTS

I. INTRODUCTION

This chapter serves as an introduction. It will address some background information about the C-9 Community, its squadrons, and the pilots who fly Navy C-9 aircraft. The research questions will be presented along with some limitations which must be addressed prior to presenting the methodology used. A section outlining some definitions and abbreviations is also included and will be presented at the end of the chapter.

A. BACKGROUND

The Naval Air Reserve presently operates one Airwing where its mission represents 100% of the Navy's CONUS based air logistics capacity. The Airwing, presently called Fleet Logistics Support Wing (FLSW), was commissioned in 1974 in New Orleans, LA. In 1986 the Airwing moved to Dallas, TX, where it presently resides. The Airwing currently consists of 13 VR Squadrons and two Wing Detachments. Eleven of the VR Squadrons fly the McDonald Douglas DC-9 type aircraft and each C-9 squadron is assigned either two or three aircraft. [Ref. 1:p.1]

The McDonald Douglas DC-9 passenger aircraft has been in production for over 30 years in a number of different varieties. The Naval Air Reserve flies the C-9B and DC-9 type

variants. The C-9B is a military version of the basic DC-9 which has long-range fuel tanks, cargo capability and enhanced navigation and communication equipment. Figure 1 displays a three view diagram of the C-9 aircraft. [Ref. 2:pp. 144-145]

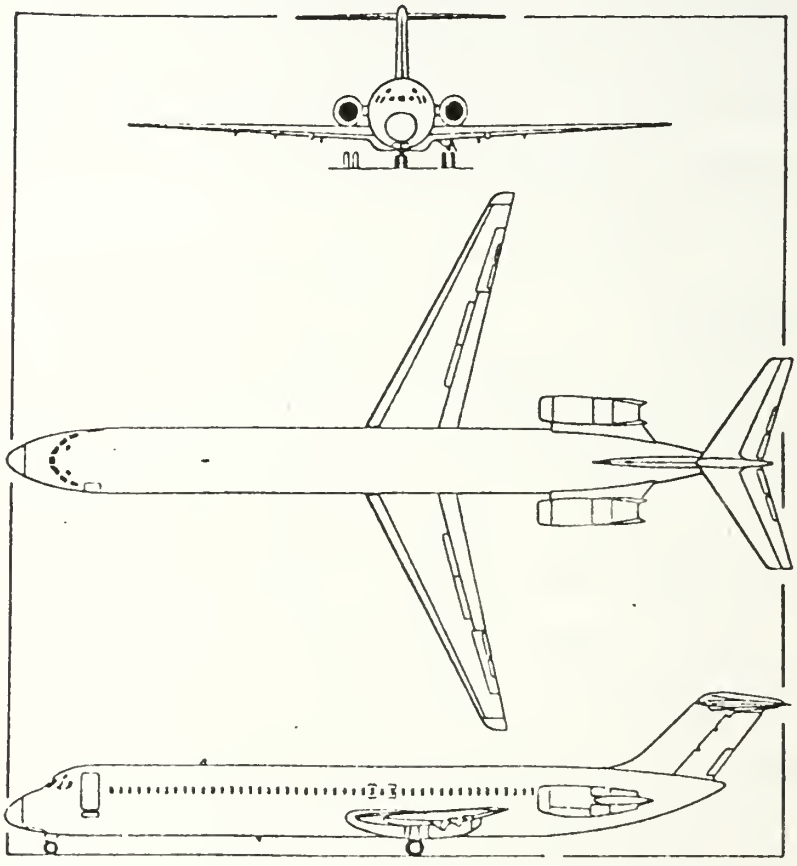

Figure 1, Three View Diagram of C-9 Aircraft

The 11 C-9 squadrons are located at NAS Alameda, CA; NAS Atlanta, GA; NAS Dallas, TX; NAF Detroit, MI; NAS Glenview, IL; NAS Jacksonville, FL; NAS Memphis, TN; NAS Norfolk, VA;

NAS North Island, CA; NAS Whidbey Island, WA; and NAS Willow Grove, PA. Although scattered in different locations across the United States, each C-9 squadron is generic in nature. The mission, officer and enlisted manning, operations, maintenance, pilot utilization, and training requirements are all similar.

1. Pilot Manning

The Naval Reserve's C-9 squadrons have no counterpart in the Regular Navy. The C-9 squadrons are manned by some of the most capable and experienced pilots in the world. This experienced cadre is made up of two different types of pilots and each is categorized as either Active Duty or Ready Reserve. Approximately 30% of the pilots are active duty (i.e., full- time) reserve pilots called TARs. TAR stands for Training and Administration of Reserves. TAR pilots are similar to Regular Navy pilots in the sense that they are on call 365 days a year and receive similar pay, medical and retirement benefits. However, they have the specific mission of supporting and training the non-active duty reservists. The other 70% of the pilots are inactive reserve (i.e., part-time) pilots called SELRES (Selective Reservist). Selective Reservists are civilians who, historically, have been predominantly Navy veterans. However, some Army and Air Force pilots have become Navy C-9 pilots after receiving a commission in the Navy. Selective Reservists are required to

participate in inactive duty for training periods and annual training, both of which are in a pay status. SELRES C-9 pilots are unique when compared to most other reservists in the sense that they are considered to be available for immediate mobilization without advanced notice. Most SELRES C-9 pilots are airline pilots by trade; however, a SELRES pilot can be from any civilian profession provided he/she is a Naval Reserve officer who received both flight training and designation as a pilot through the United States military. Among all 11 C-9 squadrons, SELRES pilot availability, participation, and utilization will be similar.

2. Scheduling and Use of Navy C-9 Aircraft

The Navy's C-9 aircraft are primarily scheduled for tasking through the Naval Air Logistics Office (NALO) which is located in New Orleans, LA. NALO acts as a central tasking control center and operates much like a scheduling department would function within a major airline. C-9 scheduling is accomplished through the efficient use of computer matching of flight requests, aircraft availability and capability, and priority of mission. The NALO flight scheduling system can handle up to the minute changes and can redirect aircraft assets, as necessary, to meet operational commitments. However, other tasking can be arranged through the Navy's Chain-of-Command via Commander Naval Air Reserve Force and/or Commander Fleet Logistics Support Wing.

As previously stated, the Naval Air Reserve's C-9 squadrons represent 100% of the Navy's CONUS based air logistics capability. However, its mission has extended around the globe to Africa, Europe, the Mediterranean, the Middle East, the Western Pacific, and South America. See Table 1 for an overview of the logistics support which was provided by Fleet Logistics Support Wing during CY 1992. [Ref. 1:pp. 1-2]

TABLE 1

FLEET LOGISTICS SUPPORT WING
LOGISTICS SUPPORT PROVIDED FOR CY 1992

LOCATION	DETACHMENTS	FLIGHT HOURS	PASSENGERS	CARGO (MILLION LBS)
WESTERN PACIFIC	33	2,948	12,455	1.4
MEDITERRANEAN	27	2,531	13,132	5.2
CONUS	0	33,916	304,453	9.4
TOTALS	60	39,395	330,040	16.0

With respect to the data presented in Table 1, the Western Pacific detachments were performed in support of Commander, Fleet Air Western Pacific, the Mediterranean detachments were performed in support of Commander, Fleet Air Mediterranean, and the CONUS flight operations were primarily performed in support of Fleet Commanders and for the transport of Naval Reserve requirements.

A C-9 aircraft on detachment will fly out of a remote location, independent of its specific squadron, for a period

of approximately two weeks. Detachments are necessary for providing naval air logistics support, where and when required, throughout the globe. Aircraft on detachment are tasked in a similar manner as those that are scheduled within the United States.

B. RESEARCH QUESTIONS

This section presents the primary and secondary research questions addressed in this thesis. This study will focus on the base pay cost savings and associated benefits of utilizing Selective Reserve pilots within the C-9 Community of the Naval Air Reserve. The primary question that will be addressed is:

What is the Base Pay Cost Savings Associated with Selective Reserve Pilots Employed within the C-9 Community of the Naval Air Reserve when Compared to an All Active Duty C-9 Community?

The following subsidiary research question will also be addressed:

What Additional Cost Savings and Direct Benefits can be Gained Through the Employment of Selective Reserve Pilots within the C-9 Community of the Naval Air Reserve when compared to an All Active Duty C-9 Community?

The next section will review some limitations of this study.

C. LIMITATIONS OF STUDY

This section discusses some limitations which must be addressed and considered prior to presenting the structure and the methods used in the analysis (i.e., the methodology).

The Base Pay Cost Savings which will be determined represents just a portion of the total dollar savings to the Navy, and ultimately, the American taxpayer, that can be gained through employment of SELRES C-9 pilots. This thesis will quantify only the Average Annual Base Pay Cost Savings and other savings associated with Pay and Allowances which are realized from the employment of SELRES C-9 pilots. This thesis <u>will not</u> present other areas where cost savings and benefits to the Navy could be recognized such as medical, dental, and moving expenses.

D. METHODOLOGY AND ORGANIZATION OF THESIS

This section discusses and outlines the methodology which will be used to answer the primary and secondary research questions.

In Chapter II the Average Annual Base Pay Cost of a SELRES C-9 pilot will be determined. The first section of Chapter II will begin with an overall discussion of the chapter which will be followed by the following sections. The following six sections are steps in a process designed to determine the Average Annual Base Pay Cost of a SELRES C-9 pilot , the focus of Chapter II. The second section will describe the different

types of SELRES duties and how they are applied to days of pay earned. The third section will present three assumptions which are required for the development of a Days of Pay Cost Model. The fourth section will present the data which will be utilized in developing the Days of Pay Cost Model and for determining the Average Annual Base Pay Cost of a SELRES C-9 pilot. The fifth section will present the SELRES Days of Pay Model which will be used to determine the Days of Pay earned by a SELRES C-9 pilot. In the sixth section, the Average Annual Base Pay Cost of individual SELRES C-9 pilots will be determined. Chapter II will conclude with a chapter summary.

In Chapter III the Aggregate Average Annual Base Pay Cost Savings associated with SELRES C-9 Pilots collectively will be determined for three different manning scenarios. The first section will present the C-9 Pilot Data which was obtained from a questionnaire sent to all C-9 squadrons. The Squadron Questionnaire Data will be used throughout the chapter to determine a dollar value for the Average Annual Base Pay Cost Savings associated with SELRES C-9 pilots. In the second section the Average Annual Base Pay Cost of all SELRES C-9 pilots will be determined. In the third section the Average Annual Base Pay Cost of all TAR C-9 pilots, who are assigned to a C-9 squadron, will be determined. In the fourth section the Average Annual Base Pay Costs of both the TARs and SELRESs will be combined. In the fifth section the Average Annual Base Pay Cost of C-9 pilots who are assigned to a squadron,

assuming that all C-9 pilot are on active duty and receive an annual salary, will be determined. In the sixth section, the Average Annual Base Pay Cost of C-9 pilots, assuming a manning mix similar to that of TAR C-9 pilots, will be determined. In the seventh section, the Average Annual Base Pay Cost of C-9 pilots, assuming a 10% reduction to the TAR manning mix, will be determined. In the eighth section, the Average Annual Base Pay Cost Savings associated with pilots in the C-9 Community will be determined for three different scenarios. In the ninth section, the number of active duty pilots that can be obtained for the same Average Annual Base Pay Cost as the present TAR/SELRES force will be determined. The tenth and last section of Chapter III will summarize the chapter.

In Chapter IV some other areas where cost savings and benefits can be recognized will be identified and presented. In the first section the average annual cost savings recognized in association with compensation and benefits will be presented. This section will discuss average annual cost savings associated with Basic Allowance for Quarters, Variable Housing Allowance, Basic Allowance for Subsistence, Pilot Flight Pay, and Retirement Pay. In the second section the average annual airline flight time benefits which are gained through the SELRES pilots who are airline pilots will be presented. The third section will summarize the chapter.

In Chapter V the entire thesis will be reviewed. Outcomes will be addressed, conclusions stated, and recommendations

made. Areas that could be used for further study will also be identified and presented.

E. DEFINITIONS AND ABBREVIATIONS

This section will present some definitions and abbreviations. The abbreviations listed are defined, as necessary, where they first appear in the text.

1. AAAFT- Average Annual Airline Flight Time
2. AABPC- Average Annual Base Pay Cost
3. AABPCO3- AABPC of a Lieutenant
4. AABPCO4- AABPC of a Lieutenant Commander
5. AAPBCO5- AABPC of a Commander
6. AAD- Additional Administrative Drills
7. ACIP- Aviation Career Incentive Pay
8. ACTDUTRA- Active Duty for Training
9. Active Duty- Full-time military members who are made up of mostly Regular and some Reserve personnel.
10. ADDF- Additional Days of Duty for Flights
11. AF- Adjustment Factor
12. AFD- Additional Flying Drills
13. AFH- Airline Flight Hours
14. Aircraft Commander- The pilot in command of the aircraft who is responsible for the safe and orderly conduct of the flight.
15. Airwing- A group of aviation squadrons that are composed of either a single type and/or multiple types of aircraft all of which are under the operational and/or administrative control of a single commander.
16. BAQ- Basic Allowance for Quarters

17. BAS- Basic Allowance for Subsistence

18. Base Pay- The component of a military member's salary that is based upon rank and years of military service.

19. C-9 Community- A group of Naval Aviation squadrons that all fly the C-9 type aircraft.

20. CO- Commanding Officer

21. CONUS- Continental United States

22. Crew Duty Day- The maximum time a pilot can be scheduled during a single period.

23. DF- Days Flown

24. DFADP- Days Flown per Active Duty Period

25. DFY- Days Flown per Year

26. DP- Days of Pay

27. DPA- Days of Pay earned during ACDUTRA

28. DPRD- Days of Pay earned by performing Regular Drills

29. FLSW- Fleet Logistics Support Wing

30. McDonald Douglas- A major manufacture of military and commercial aircraft.

31. NADP- Number of Active Duty Pilots

32. NAF- Naval Air Facility. NAFs are located on a military base other than Navy.

33. NALO- Naval Air Logistics Office

34. NAS- Naval Air Station

35. Naval Air Reserve- A component of the Naval Reserve that is composed of aviation type units and commands.

36. O3- Lieutenant

37. O4- Lieutenant Commander

38. O5- Commander

39. PCS- Permanent Change of Station

40. Quarters- Housing provided by the Government

41. RD- Regular Drills

42. RPO3- Relative Percent Lieutenants

43. RPO4- Relative Percent Lieutenant Commanders

44. RPO5- Relative Percent Commanders

45. SELRES- Selective Reservist

46. SELRES Selection Board- The meeting where the senior officers of a squadron review SELRES C-9 pilot applicants for selection.

47. SO3- SELRES Lieutenant

48. SO4- SELRES Lieutenant Commander

49. SO5- SELRES Commander

50. TAR- Training and Administration of Reserves

51. TO3- TAR Lieutenant

52. TO4- TAR Lieutenant Commander

53. TO5- TAR Commander

54. TSCOST- TAR and SELRES Cost

55. VHA- Variable Housing Allowance

56. VR- Prefix for squadron identification. VR relates to squadrons who fly fixed-wing type aircraft utilized for logistics support. (i.e., VR-56 would represent Logistics Support Squadron 56).

57. WADP- Weeks per Active Duty Period

58. WY- Weeks per Year

59. XO- Executive Officer

F. SUMMARY OF CHAPTER I

This chapter served as an introduction to this thesis. Some background information about the Naval Reserve's C-9 Community, C-9 pilot manning, and C-9 aircraft scheduling was presented. Data concerning the background information presented was obtained from FLSW, NALO, and from personal knowledge of the TAR/SELRES C-9 Community. The primary and secondary research questions were stated. The limitations of this study (i.e., the boundaries) were presented. The methodology which will be used to gather TAR and SELRES pilot data, through the use of a questionnaire sent to all 11 C-9 squadrons, and how the specific research questions will be answered was described. Finally, this chapter concluded with a section of definitions and abbreviations which are necessary for easy identification of terms and understanding of text.

II. ANNUAL BASE PAY COST OF A SELECTIVE RESERVIST

A. DISCUSSION

In this chapter, the Average Annual Base Pay Cost (AABPC) of a Selective Reservist is determined. The AABPC is necessary to help determine the Average Annual Base Pay Cost Savings pertaining to the present method of TAR/SELRES C-9 pilot manning verses an all active duty C-9 pilot force. A Days of Pay Model is developed and used to determine the average days of pay earned by a SELRES C-9 pilot during a year. Once determined, the average days of pay is then multiplied by a pilot's average daily base pay to obtain the AABPC of a SELRES C-9 pilot. Some basic assumptions are presented along with actual days flown data which are used in developing the model. The days flown data is also used as input to the model to determine the average annual base pay earned by a SELRES pilot. Once determined, the AABPC is used in Chapter III to calculate the combined average annual base pay cost savings of the entire C-9 Airwing consisting of 11 squadrons.

B. TYPES OF SELRES DUTY AND HOW THEY ARE APPLIED

The SELRES Days of Pay Model takes into account only Regular Drills (RD), Additional Flying Drills (AFD), Additional Days of Duty for Flights (ADDF), and the annual

Active Duty for Training (ACDUTRA) performed by a SELRES C-9 pilot during a typical year of affiliation with a Navy C-9 squadron. Additional Administrative Drills (AAD) for SELRES Commanding Officers (COs) and Executive Officers (XOs) are taken into account when computing the Average Annual Base Pay Cost of a Selective Reservist. Non-required days of duty and duty not related to flying are not included in the model.

A SELRES can receive monetary earnings for performing drills and/or days of duty. Each SELRES pilot within the C-9 Community is authorized to perform the following during a given fiscal year.

1. 48 Regular Drills.
2. 60 Additional Flight Drills.
3. Two Weeks of Active Duty for Training.
4. Additional Days of Duty for Flights.
5. 12 Additional Administrative Drills for COs and XOs.

A Regular Drill is required and is performed by a SELRES during a monthly drill weekend. Additional Flying Drills and Additional Days of Duty for Flights are performed, as required, to meet the operational commitments and flight training requirements of a squadron. Active Duty for Training is required to be performed annually. All drills and/or days of duty authorized for a given fiscal year must be utilized during that year.

A Regular Drill, an Additional Flight Drill, and an Additional Administrative Drill are earned upon the completion

of four hours of duty (i.e., work). Up to two drills (i.e., considered eight hours of duty) can be performed in a single day. Each four hour drill earns the SELRES a day of pay. Therefore, up to two days of pay can be earned during a single day if, and only if, the SELRES completes two drills. For Regular Drills and Additional Administrative Drills, the SELRES' obligated work period would end after the completion of four or eight hours of work depending on the number (i.e., one or two) of drills earned. However, when performing Flight Drills, a C-9 pilot can be utilized up to 18 hours in a single day. Eighteen hours is the absolute maximum a C-9 pilot can be utilized (i.e., for flight duties) providing there is a properly functioning autopilot in the aircraft and the Aircraft Commander elects to extend the crew duty day two hours beyond the normal 16 hour maximum [Ref. 3:p. III-8-1]. Under this condition, the SELRES will still earn only two drills (i.e., equivalent to only eight hours of work) which will still yield two days of pay. Each day of duty during the two week active duty period will earn a single day of pay. A normal day of duty will usually last about eight hours. There is no two for one relationship when performing a single day of duty. The two for one relationship holds only when utilizing drills. Whether or not to perform Additional Flight Drills or Additional Days of Duty for Flights is usually chosen by the SELRES pilot. However, it is usually customary to perform all 60 Additional Flight Drills prior to performing Additional

Days of Duty for Flights. Also, some pilots will elect to ration their drills throughout the year, mixing AFDs and ADDFs.

C. ASSUMPTIONS

This section presents three basic assumptions which are required for model development and to ensure an accurate average count of days of pay. The three assumptions follow.

1. A SELRES will maximize his/her base pay earnings by taking advantage of the two for one option when using his/her 60 Additional Flight Drills. For example, a SELRES will try and use all 60 ADFs during 30 days of flying. This would earn 60 days of pay for 30 days of work.

2. A SELRES pilot will fly, on the average, the same number of days as a TAR pilot during his/her two weeks of active duty. During ACDUTRA, a SELRES is fully integrated within the TAR ranks and for all practical purposes is considered to be on active duty.

3. A SELRES pilot will fly, on the average, six days per year on drill weekends. Flying on a drill weekend is occasionally necessary to fulfill flight training requirements and mission tasking.

D. PRESENTATION OF DATA

As described in Chapter I, all 11 C-9 squadrons are generic in nature and SELRES participation, on the average, will be similar. Table 2 lists actual data for a complete fiscal year from one of the 11 C-9 squadrons. Throughout the remainder of this thesis, the squadron identified in Table 2 will be referred to as VR-A. Data for pilots who were not present for the entire year is excluded.

TABLE 2

VR-A DAYS FLOWN DATA

PILOT NUMBER	RANK	TAR/SELRES	DAYS FLOWN
1	O5	T	98
2	O4	T	93
3	O4	T	91
4	O4	T	89
5	O4	S	82
6	O4	T	70
7	O3	S	67
8	O4	T	65
9	O5	S	65
10	O3	S	62
11	O3	T	61
12	O5	S	61
13	O3	S	54
14	O4	S	53
15	O5	S	52
16	O3	S	52
17	O5	T	50
18	O4	S	50
19	O4	S	49
20	O4	S	48
21	O5	S	46
22	O4	S	46
23	O4	S	43
24	O3	S	42
25	O3	S	42
26	O3	S	41
27	O4	S	41
28	O4	S	28

Referring to Table 2, each Pilot Number corresponds to an individual pilot. Lieutenants, Lieutenant Commanders, and Commanders are identified by O3, O4 and O5 respectively. TAR and SELRES pilots are identified by T and S respectively. Days Flown corresponds to the actual days flown by each pilot during the year. A flight occurs once the aircraft leaves the ground. A single flight can last just a few minutes or as long

as six hours, and more than one flight can take place in a single day.

The number of days flown by C-9 pilots and the rank of each pilot will be utilized to determine the average annual base pay of a SELRES pilot. Actual days flown data for a single squadron of C-9 pilots is utilized and applied to determine the Average Annual Base Pay Cost of a SELRES pilot. The data taken from the model squadron, VR-A, will then be applied to all 11 C-9 squadrons.

E. SELRES DAYS OF PAY MODEL

The SELRES Days of Pay Model is designed to determine the Days of Pay earned by a SELRES, utilizing as input his/her number of Days Flown. In the model, an Adjustment Factor (AF) is subtracted from the number of days flown. The Adjustment Factor is necessary to compensate for days flown during ACDUTRA and on drill weekends. Since a SELRES is already getting paid for drill weekends and ACDUTRA participation whether or not he/she flies, the AF is necessary to eliminate duplicating days of pay earned while flying during a drill weekend or on ACDUTRA.

1. Calculation of the Adjustment Factor

The Adjustment Factor is calculated by summing the number of days flown during ACDUTRA and the number of days flown on drill weekends. The average number of days flown on ACDUTRA by a Selective Reservist is equivalent to that of a

TAR pilot (Assumption 2). Using the summarized data in Table 3, the average number of days flown on ACDUTRA is computed as follows.

TABLE 3

VR-A TAR PILOTS

PILOT NUMBER	DAYS FLOWN
1	98
2	93
3	91
4	89
6	70
8	65
11	61
17	50
TOTAL	617
AVERAGE	77

DFADP = [(77 DFY) / (52 WY)] X (2 WADP)
= 3 days

where, DFADP = Days Flown per Active Duty Period
DFY = Days Flown per Year
WY = Weeks per Year
WADP = Weeks per Active Duty Period

A SELRES will also, on the average, fly six days (Assumption 3) during drill weekends. By knowing the average number of days flown during ACDUTRA and the number of days flown on drill weekends, the Adjustment Factor can be calculated as follows.

AF = 3 days + 6 days = 9 days

2. Determination of Days of Pay

The SELRES Days of Pay Model utilizes the number of Days Flown during a complete year by a SELRES pilot as input and the number of Days of Pay (DP) earned by the SELRES as output. The model is designed to be used after a pilot's yearly total of days flown is determined. The model is not designed to be utilized for determining the days of pay earned for periods less than one year. For example, if after the second month a SELRES pilot flew ten days, the model would probably not determine the correct number of days of pay earned for two months. This is because the exact number and type of drills, days of duty for flying, and whether or not any flights took place on a drill weekend or on ACDUTRA are all unknown. It is only after a complete year of flying that the Days of Pay Model and its assumptions are valid. To review, the model is constructed using the following three assumptions. First, the model assumes that three days were flown during the ACDUTRA period and six days were flown on drill weekends for a total of nine days. Secondly, the model assumes that out of the total number of days flown, 30 days were flown utilizing 60 Additional Flying Drills. And finally, the model assumes that after considering the above two assumptions, the remaining days flown could have only been obtained by using Additional Days of Duty for Flights. The Days of Pay Model can be derived and shown mathematically and presented graphically as follows.

The first part of the model takes into account the nine days flown during ACDUTRA and on drill weekends. It is derived as follows.

DP = 62

s.t., 0 <= DF < 9

where, DP = Days of Pay

The second part of the model takes into account the 30 days flown utilizing 60 Additional Flight Drills. The necessary Adjustment Factor is applied here to account for the nine days flown during ACDUTRA and on drill weekends.

DP = [(DF - AF) x 2] + DPA + DPRD

= [(DF - 9) x 2] + 14 + 48

= (2 x DF) - 18 + 62

= (2 x DF) + 44

s.t., 9 <= DF <= 39

where, DP = Days of Pay

DF = Days Flown

AF = Adjustment Factor

DPA = Days of Pay earned during ACDUTRA

DPRD = Days of Pay earned by performing Regular Drills

Likewise, the last part of the model takes into account any Additional Days of Duty for flights that were performed.

$$DP = (DF - 39) + 60 + 14 + 48$$

$$= DF + 83$$

s.t., $DF > 39$

where, DF = days flown

See Figure 2 for a graphic presentation of the model.

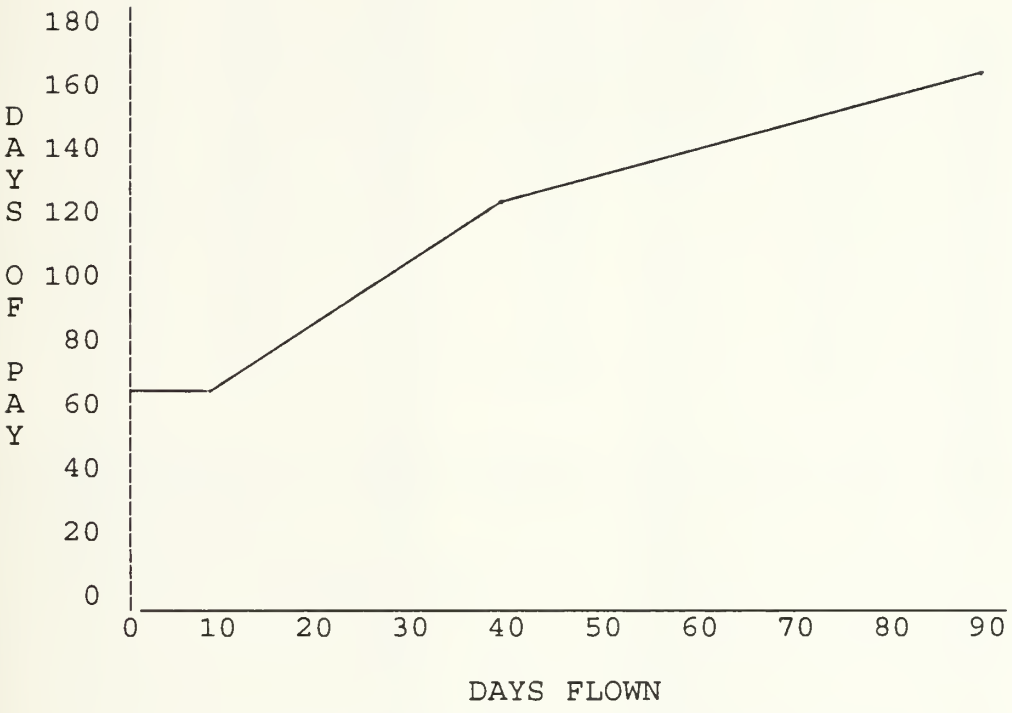

Figure 2, Days of Pay vs Days Flown

The following table, Table 4, displays Days of Pay vs Days Flown data corresponding to Figure 2. Likewise, Table 4A displays Days of Pay vs Days Flown data for squadron VR-A.

TABLE 4

DAYS FLOWN VS DAYS OF PAY

DAYS FLOWN	DAYS OF PAY	DAYS FLOWN	DAYS OF PAY
0	62	45	128
1	62	46	129
2	62	47	130
3	62	48	131
4	62	49	132
5	62	50	133
6	62	51	134
7	62	52	135
8	62	53	136
9	62	54	137
10	64	55	138
11	66	56	139
12	68	57	140
13	70	58	141
14	72	59	142
15	74	60	143
16	76	61	144
17	78	62	145
18	80	63	146
19	82	64	147
20	84	65	148
21	86	66	149
22	88	67	150
23	90	68	151
24	92	69	152
25	94	70	153
26	96	71	154
27	98	72	155
28	100	73	156
29	102	74	157
30	104	75	158
31	106	76	159
32	108	77	160
33	110	78	161
34	112	79	162
35	114	80	163
36	116	81	164
37	118	82	165
38	120	83	166
39	122	84	167
40	123	85	168
41	124	86	169
42	125	87	170
43	126	88	171
44	127	89	172

TABLE 4A

DAYS FLOWN VS DAYS OF PAY
(VR-A SELRES PILOTS)

PILOT NUMBER	DAYS FLOWN	DAYS OF PAY
5	82	165
7	67	150
9	65	148
10	62	145
12	61	144
13	54	137
14	53	136
15	52	135
16	52	135
18	50	133
19	49	132
20	48	131
21	46	129
22	46	129
23	43	126
24	42	125
25	42	125
26	41	124
27	41	124
28	28	100

F. DETERMINATION OF THE AVERAGE ANNUAL BASE PAY COST OF A SELRES PILOT

The Average Annual Base Pay Cost of a SELRES pilot is determined by utilizing the Days of Pay data from Table 4A and then multiplying the Days of Pay by an officer's average daily base pay. An officer's average annual base pay is calculated and presented in this section. The Average Annual Base Pay Cost will be used in Chapter III to determine the Average Annual Base Pay Cost Savings pertaining to TAR and SELRES pilot manning.

The following table, Table 5, presents the monthly base pay data for Lieutenants, Lieutenant Commanders, and Commanders based upon years of military service [Ref. 4].

TABLE 5

COMMISSIONED OFFICERS MONTHLY BASE PAY FOR 1993
(IN DOLLARS)

YEARS OF SERVICE	LIEUTENANT	LIEUTENANT COMMANDER	COMMANDER
6,7	2,856.30		
8,9	2,958.60		
10,11	3,118.80	3,273.00	
12,13	3,273.00	3,456.90	
14,15		3,614.70	3,826.80
16,17		3,773.40	4,113.30
18,19		3,877.50	4,348.80
**********	RETIRE AT 20	YEARS	**********
AVERAGES	3,051.68	3,599.10	4,096.30

The following table, Table 6, summarizes an officer's average annual base pay.

TABLE 6

COMMISSIONED OFFICERS AVERAGE ANNUAL BASE PAY
(IN DOLLARS)

TIME FRAME	LIEUTENANT	LIEUTENANT COMMANDER	COMMANDER
YEARLY	36,620.16	43,189.20	49,155.60
MONTHLY	3,051.68	3,599.10	4,096.30
DAILY	100.33	118.33	134.67

The Average Annual Base Pay Cost for a SELRES Lieutenant assigned to VR-A can be determined by taking the number of Days of Pay for each pilot (from Table 4A) and multiplying by the Average Daily Base Pay (from Table 6). The result is shown in Table 7 for both individual pilots and on average.

TABLE 7

VR-A SELRES LIEUTENANTS
AVERAGE ANNUAL BASE PAY COST
(ONE DAY OF BASE PAY = $100.33 DOLLARS)

PILOT NUMBER	DAYS FLOWN	DAYS OF PAY	BASE PAY (IN DOLLARS)
7	67	150	$15,049.50
10	62	145	14,547.85
13	54	137	13,745.21
16	52	135	13,544.55
25	42	125	12,541.25
26	41	124	12,440.92
TOTALS	318	816	$81,869.28
AVERAGES	53	136	$13,644.88

The Average Annual Base Pay Cost for a Lieutenant Commander assigned to VR-A can be determined by taking the number of Days of Pay for each pilot (from Table 4A) and multiplying by the Average Daily Base Pay (from Table 6). The result is shown in Table 8 for both individual pilots and on average.

TABLE 8

VR-A SELRES LIEUTENANT COMMANDERS
AVERAGE ANNUAL BASE PAY COST
(ONE DAY OF BASE PAY = $118.33 DOLLARS)

PILOT NUMBER	DAYS FLOWN	DAYS OF PAY	BASE PAY (IN DOLLARS)
5	82	165	$19,524.40
14	53	136	16,092.88
18	50	133	15,737.89
19	49	132	15,619.56
20	48	131	15,501.23
22	46	129	15,264.57
23	43	126	14,909.58
27	41	124	14,672.92
28	28	100	11,833.00
TOTALS	440	1,176	$139,156.08
AVERAGES	49	131	$ 15,461.79

The Average Annual Base Pay Cost for a Commander assigned to VR-A can be determined by taking the number of Days of Pay for each pilot (from Table 4A) and multiplying by the Average Daily Base Pay (from Table 6). The result is shown in Table 9 for both individual pilots and on average.

TABLE 9

VR-A SELRES COMMANDERS
AVERAGE ANNUAL BASE PAY COST
(ONE DAY OF BASE PAY = $134.67 DOLLARS)

PILOT NUMBER	DAYS FLOWN	DAYS OF PAY	BASE PAY (IN DOLLARS)
9	65	148	$19,931.16
12	61	144	19,392.48
15	52	135	18,180.45
21	46	129	17,372.43
TOTALS	224	556	$74,876.52
ADMINISTRATIVE DRILLS (CO & XO)		24	3,232.08
TOTALS		580	$78,108.60
AVERAGES	56	145	$19,527.15

Note: The additional 24 days of pay in Table 8 is added due to the 12 Additional Administrative Drills authorized for SELRES Commanders who are assigned as the Commanding Officer (CO) or Executive Officer (XO).

The following table, Table 10, provides a summary of the Average Annual Base Pay Cost of a SELRES pilot assigned to VR-A.

TABLE 10

AVERAGE ANNUAL BASE PAY COST
OF A SELRES C-9 PILOT
(IN DOLLARS)

RANK	AVERAGE BASE PAY
LIEUTENANT	13,644.88
LIEUTENANT COMMANDER	15,461.79
COMMANDER	19,527.15

G. SUMMARY OF CHAPTER II

In this chapter, the Average Annual Base Pay Cost of a Selective Reserve pilot was determined. A SELRES Days of Pay Model was developed and utilized to determine the average Days of Pay earned by a SELRES pilot during a complete year. The input for the model was Days Flown and the output of the model was Days of Pay. The average Days of Pay was then multiplied by the pilot's Average Daily Base Pay to determine the Average Annual Base Pay Cost of a SELRES pilot. The base pay values for each pilot's rank was computed and will be used as an average value. The exact amount of base pay each C-9 pilot

will earn would be difficult to determine, is constantly changing, and depends on the pilot's date-of-rank and years of military service. Any "exact value" determined would represent just a short-term snapshot; therefore, average values will be utilized in Chapter III to determine the Average Annual Base Pay Cost Savings pertaining to TAR and SELRES pilot manning within the C-9 Community.

III. BASE PAY COST SAVINGS ASSOCIATED WITH SELRES C-9 PILOTS

In this chapter, the primary research question will be answered by comparing three alternative C-9 pilot manning scenarios. As stated in Chapter I, the primary research question is:

What is the Base Pay Cost Savings Associated with Selective Reserve Pilots Employed within the C-9 Community of the Naval Air Reserve when compared to an All Active Duty C-9 Community?

This chapter consists of ten sections which are labeled A through J respectively. The first section will present the C-9 Pilot Data which was obtained from a squadron questionnaire. This data will be utilized in the second and third sections of the chapter to individually determine the Average Annual Base Pay Cost of SELRES and TAR C-9 pilots respectively. In the fourth section, the Average Annual Base Pay Cost of TAR and SELRES pilots will be determined by combining the individual TAR and SELRES base pay costs determined in Sections B and C. The fifth, sixth, and seventh sections will present comparative costs for three hypothetical alternative C-9 pilot manning scenarios. In the fifth section, the Average Annual Base Pay Cost of C-9 pilots, assuming that all C-9 pilots identified on the questionnaire were on active duty, will be determined. This value will be

obtained by assuming that all SELRES C-9 pilots are similar to TARs and receive an annual salary. In the sixth section, the Average Annual Base Pay Cost of C-9 pilots, assuming a manning mix similar to that of TAR C-9 pilots, will be determined. In the seventh section, the Average Annual Base Pay Cost of C-9 pilots, assuming a 10% reduction of the TAR manning mix, will be determined. In the eighth section, the Average Annual Base Pay Cost of TAR and SELRES C-9 pilots will be compared to the base pay cost values determined in Sections E through G. The monetary difference in base pay (i.e., the Base Pay Cost Savings) between the three different alternative manning scenarios will yield the answer to the primary research question. In the ninth section, the number of active duty pilots that can be obtained for the same Average Annual Base Pay Cost as the present TAR/SELRES force will be determined. The last section, Section J, will summarize this chapter.

A. PRESENTATION OF DATA

In this section the C-9 Pilot Data obtained from the individual squadron questionnaires is presented. Questionnaires were sent to the Operations Officer of each of the 11 C-9 squadrons. Data requested covered the following ten areas:

1. NUMBER OF AIRCRAFT ASSIGNED
2. NUMBER OF TAR PILOTS
3. NUMBER OF SELRES PILOTS

4. NUMBER OF SELRES PILOTS WHO ARE AIRLINE PILOTS
5. NUMBER OF TAR LIEUTENANTS
6. NUMBER OF TAR LIEUTENANT COMMANDERS
7. NUMBER OF TAR COMMANDERS
8. NUMBER OF SELRES LIEUTENANTS
9. NUMBER OF SELRES LIEUTENANT COMMANDERS
10. NUMBER OF SELRES COMMANDERS

The data obtained is presented in Table 11. All 11 C-9 squadrons are identified in Table 11 as VR-A, VR-B, VR-C, etc. Squadron C-9 pilot manning is similar amongst the 11 C-9 squadrons for a two or three aircraft squadron. However, inconsistencies do occur. Over the course of a year some TAR pilots transfer out of a squadron and do not get reassigned to another C-9 squadron. Other TAR pilots may be waiting to transfer from one C-9 squadron to another. Although SELRES C-9 pilot manning operates in a similar fashion, SELRES billets may be gapped until a SELRES Selection Board takes place and new SELRES pilots are chosen. A squadron will gap a SELRES billet if no "qualified" applicant is available for selection.

The Squadron Questionnaire Data presented in Table 11 is summarized in Table 12. The summarized data from Table 12 and the Average Annual Base Pay Cost of TAR and SELRES pilots, calculated in Chapter II and reproduced here in Table 13, will be utilized throughout this chapter to determine a value for the Average Annual Base Pay Cost Savings Associated with

Selective Reserve Pilots Employed within the C-9 Community of the Naval Air Reserve.

TABLE 11

SQUADRON QUESTIONNAIRE DATA

SQUADRONS	VR-A	VR-B	VR-C	VR-D	VR-E	VR-F	VR-G	VR-H	VR I	VR-J	VR-K
NUMBER OF AIRCRAFT	3	3	3	3	3	2	2	2	2	2	2
TAR PILOTS	10	10	9	10	8	6	9	8	11	8	6
SELRES PILOTS	27	27	27	23	27	14	18	18	18	18	18
SELRES AIRLINE PILOTS	20	23	23	21	16	14	13	13	16	17	10
TAR LIEUTENANTS	5	6	1	2	3	3	3	3	5	4	4
TAR LIEUTENANT COMMANDERS	4	3	6	6	4	2	5	3	4	4	2
TAR COMMANDERS	1	1	2	2	1	1	1	2	2	0	0
SELRES LIEUTENANTS	3	9	7	8	13	3	8	5	3	1	4
SELRES LIEUTENANT COMMANDERS	19	14	16	12	10	7	6	10	11	13	11
SELRES COMMANDERS	5	4	4	3	4	4	4	3	4	4	3

TABLE 12

SUMMARY OF QUESTIONNAIRE DATA

NUMBER OF AIRCRAFT	27
TAR PILOTS	95
SELRES PILOTS	235
SELRES AIRLINE PILOTS	186
TAR LIEUTENANTS	39
TAR LIEUTENANT COMMANDERS	43
TAR COMMANDERS	13
SELRES LIEUTENANTS	64
SELRES LIEUTENANT COMMANDERS	129
SELRES COMMANDERS	42

TABLE 13

AVERAGE ANNUAL BASE PAY COST
OF TAR AND SELRES C-9 PILOTS
(IN DOLLARS)

TAR LIEUTENANT	36,620.16
TAR LIEUTENANT COMMANDER	43,189.20
TAR COMMANDER	49,155.60
SELRES LIEUTENANT	13,644.88
SELRES LIEUTENANT COMMANDER	15,461.79
SELRES COMMANDER	19,527.15

B. DETERMINATION OF THE AVERAGE ANNUAL BASE PAY COST OF ALL SELRES C-9 PILOTS

In this section, the Average Annual Base Pay Cost of all the SELRES C-9 pilots is determined. This value is necessary and will be used later in the chapter in answering the primary research question. Figure 3 shows the relative proportion of all SELRES C-9 pilots, by rank, who are assigned to a C-9 squadron.

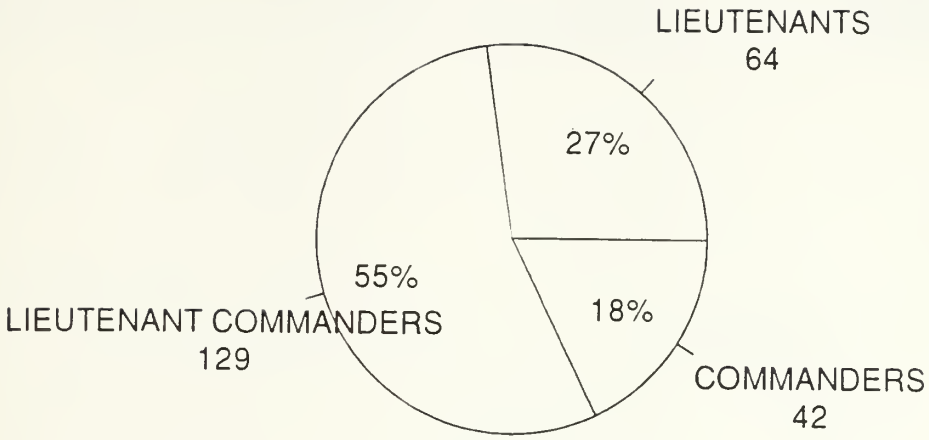

Figure 3, Number of SELRES C-9 Pilots by Rank

Data in Figure 3 was obtained from the Squadron Questionnaire Data presented in Table 12. Utilizing the data from Table 13 and Figure 3, the Average Annual Base Pay Cost for all SELRES C-9 pilots is determined to be $ 3,687,983.53. Table 14 and Figure 4 show the relative contribution of each rank to the total Average Annual Base Pay Cost of SELRES C-9 pilots.

TABLE 14
TOTAL AVERAGE ANNUAL BASE PAY COST OF
SELRES C-9 PILOTS

	NUMBER OF C-9 PILOTS	AVERAGE ANNUAL BASE PAY COST	TOTAL
LIEUTENANTS	64	13,644.88	873,272.32
LIEUTENANT COMMANDERS	129	15,461.79	1,994,570.91
COMMANDERS	42	19,527.15	820,140.30
TOTALS	235		3,687,983.53

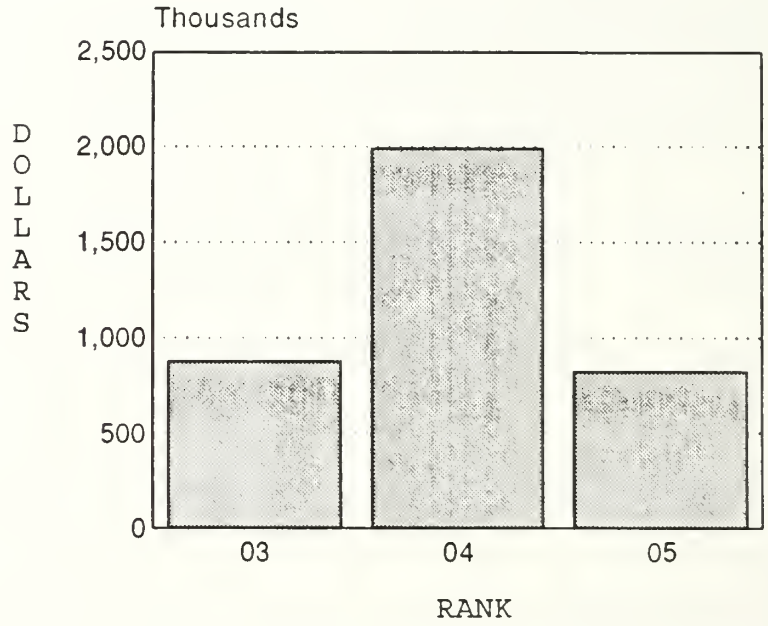

Figure 4, SELRES C-9 Pilots Average Annual Base Pay Cost by Rank

C. DETERMINATION OF THE AVERAGE ANNUAL BASE PAY COST OF ALL TAR C-9 PILOTS

In this section, the Average Annual Base Pay Cost of all TAR C-9 pilots, who are assigned to a squadron, is determined.

This value is necessary and will be used later in the chapter in answering the primary research question. Figure 5 shows the relative proportion of all TAR C-9 pilots, by rank, who are assigned to a squadron.

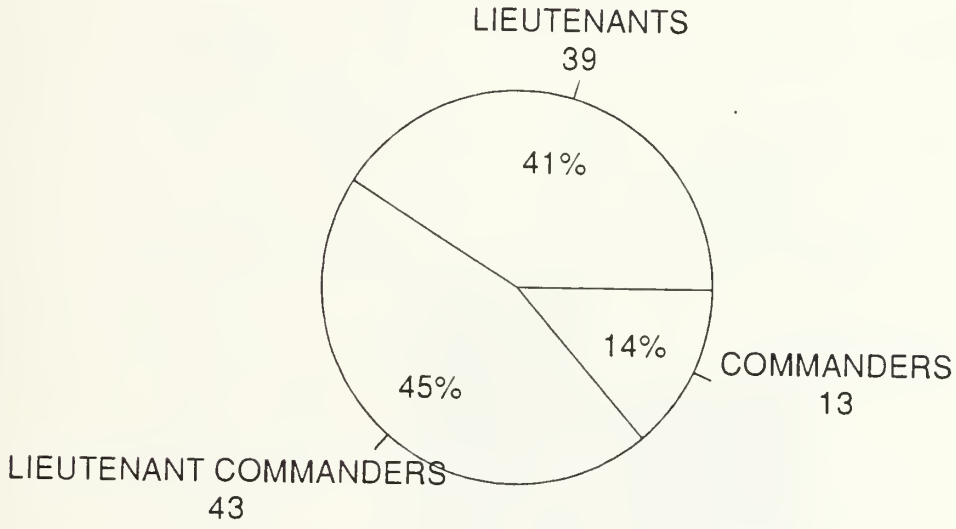

Figure 5, Number of TAR C-9 Pilots by Rank

Data in Figure 5 was obtained from the Squadron Questionnaire Data presented in Table 12. Utilizing the data from Table 13 and Figure 5, the Average Annual Base Pay Cost of TAR C-9 pilots, who are assigned to a squadron, is

determined to be $ 3,924,344.64. Table 15 and Figure 6 show the relative contribution of each rank to the total Average Annual Base Pay Cost of TAR C-9 pilots.

TABLE 15

TOTAL AVERAGE ANNUAL BASE PAY COST OF TAR C-9 PILOTS

	NUMBER OF C-9 PILOTS	AVERAGE ANNUAL BASE PAY COST	TOTAL
LIEUTENANTS	39	36,620.16	1,428,186.24
LIEUTENANT COMMANDERS	43	43,189.20	1,857,135.60
COMMANDERS	13	49,155.60	639,022.80
TOTALS	95		3,924,344.64

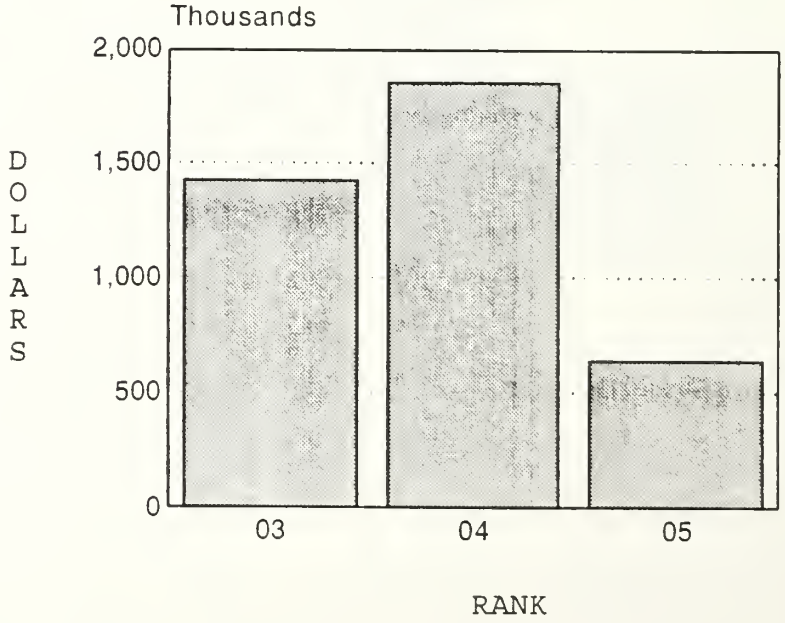

Figure 6, TAR C-9 Pilots Average Annual Base Pay Cost by Rank

D. DETERMINATION OF THE AVERAGE ANNUAL BASE PAY COST OF TAR AND SELRES C-9 PILOTS

In this section the Average Annual Base Pay Cost of TAR and SELRES C-9 pilots is determined. This value is necessary and will be used later in the chapter in answering the primary research question. Figure 7 shows the relative proportion of TAR and SELRES C-9 pilots, by rank, who are assigned to a C-9 squadron.

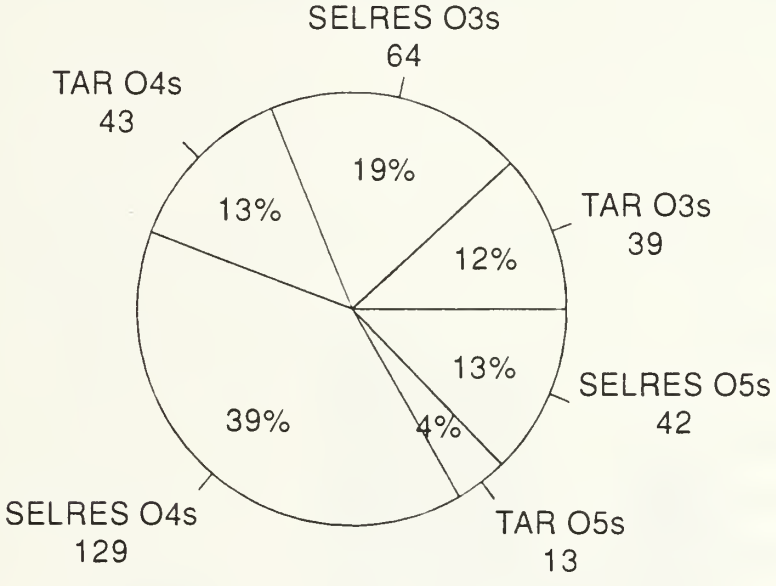

Figure 7, Number of TAR and SELRES Pilots by Rank

Data in Figure 7 was obtained by combining the data from Figures 3 and 5. Utilizing the data from Table 13 and Figure 7, the combined Average Annual Base Pay Cost for TAR

and SELRES C-9 pilots is determined to be $7,612,326. Table 16 and Figure 8 show the relative contribution of each rank to the total Average Annual Base Pay Cost of TAR and SELRES C-9 pilots.

TABLE 16

TOTAL AVERAGE ANNUAL BASE PAY COST OF
TAR AND SELRES C-9 PILOTS
(IN DOLLARS)

	TAR	SELRES	TOTAL
LIEUTENANTS	1,428,186	873,272	2,301,458
LIEUTENANT COMMANDERS	1,857,135	1,994,570	3,851,705
COMMANDERS	639,023	820,140	1,459,163
TOTALS	3,924,344	3,687,982	7,612,326

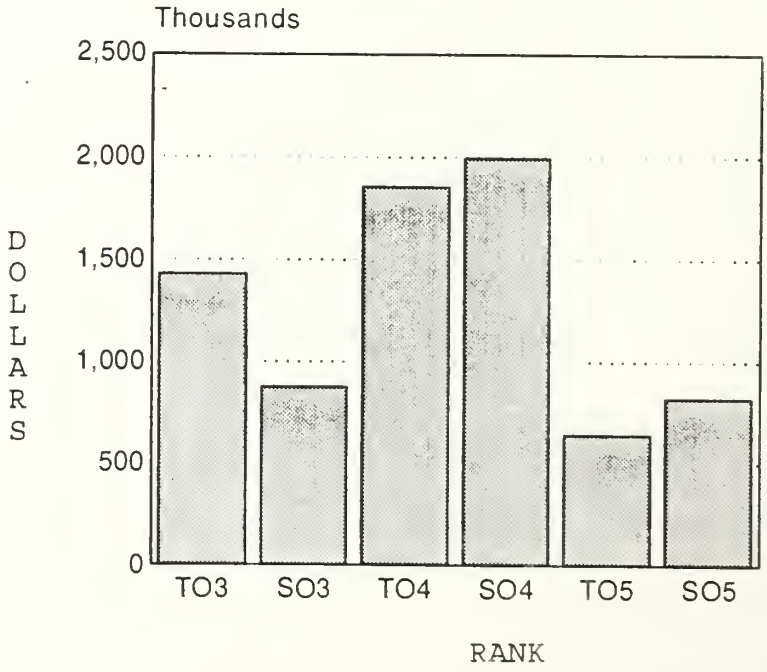

Figure 8, TAR and SELRES C-9 Pilots Average Annual Base Pay Cost by Rank

E. DETERMINATION OF THE AVERAGE ANNUAL BASE PAY COST OF C-9 PILOTS ASSUMING THAT ALL C-9 PILOTS ARE ON ACTIVE DUTY

In this section, the Average Annual Base Pay Cost of all C-9 pilots is determined under the assumption that all squadron C-9 pilots were on active duty and received an annual salary. This value is necessary and will be used later in this chapter in answering the primary research question.

The objective here is to determine a comparative cost figure under the hypothetical situation of all pilots being on active duty. Since TAR C-9 pilots exist not only to fly but to also train and administer SELRES C-9 pilots, TAR and SELRES designations as such would essentially go away if the C-9 community was permanently and totally converted into an all active duty force. This means that an all active duty C-9 community would not necessarily be called a community of TARs, but would simply be referred to as a aviation community made up of active duty C-9 squadrons within the regular Navy.

Two assumptions are explicit in this section. If the C-9 community were to be replaced by an active duty force, (1) the total number of pilots would remain unchanged, and (2) the distribution among ranks would remain unchanged. These two assumptions will be relaxed in Sections F and G.

Figure 9 shows the relative proportion of all TAR C-9 pilots who are assigned to a C-9 squadron and represents the manning situation which would occur if the entire C-9 community, as it currently exists, was mobilized.

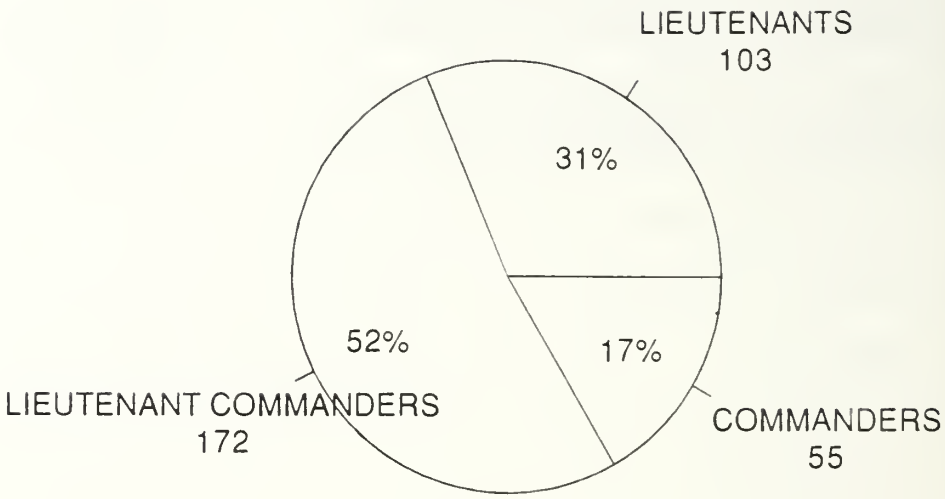

Figure 9, Number of C-9 Pilots taken as if all Pilots are Active Duty

Data in Figure 9 was obtained by combining, by rank, the data in Figure 7. Utilizing the data from Table 13 and Figure 9, the Average Annual Base Pay Cost of C-9 pilots, assuming that all C-9 pilots are on active duty, is determined

to be $13,903,976. Table 17 and Figure 10 show the relative contribution of each rank to the total Average Annual Base Pay Cost of C-9 pilots taken as if all C-9 pilots are on active duty and received an annual salary.

TABLE 17

TOTAL ANNUAL BASE PAY COST OF
SQUADRON C-9 PILOTS
(IN DOLLARS)

	NUMBER OF C-9 PILOTS	AVERAGE ANNUAL BASE PAY COST	TOTAL
LIEUTENANTS	103	36,620.16	3,771,876
LIEUTENANT COMMANDERS	172	43,189.20	7,428,542
COMMANDERS	55	49,155.60	2,703,558
TOTALS	330		13,903,976

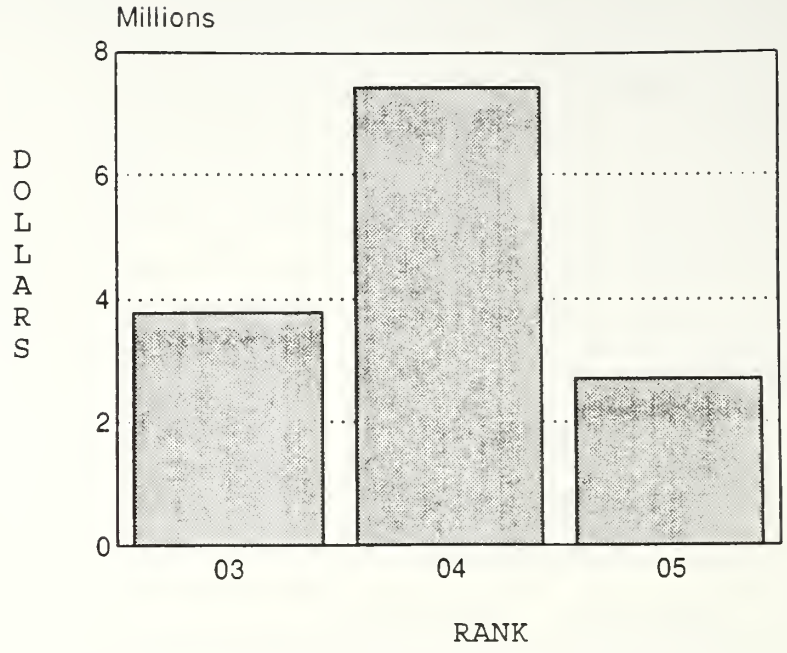

Figure 10, Active Duty C-9 Pilots Average Annual Base Pay Cost by Rank

F. DETERMINATION OF THE AVERAGE ANNUAL BASE PAY COST OF C-9 PILOTS ASSUMING A MANNING MIX SIMILAR TO THAT OF TAR C-9 PILOTS

In this section the Average Annual Base Pay Cost of C-9 pilots, assuming a manning mix similar to that of TAR C-9 pilots, will be determined. This value is necessary and will be used later in this chapter in answering the primary research question. To be specific, in this section it is assumed that (1) an all active duty force would have the same total number of pilots as the present C-9 community; however, (2) the distribution of pilots among ranks would be similar to

the present distribution of TARs (not SELRES) officers. This is plausible because a TAR manning mix (i.e., distribution) reflects a more probable manning distribution than that described in Section E, which would be obtained through normal acquisition and attrition of active duty pilots due to the fact that TARs are active duty C-9 pilots. Table 18 shows the relative percentage of TAR C-9 pilots by rank. Table 19 shows the redistribution of all 330 squadron C-9 pilots which is obtained after applying the TAR manning mix percentages from Table 18.

TABLE 18

TAR C-9 PILOT MANNING MIX

	NUMBER OF TAR C-9 PILOTS	RELATIVE PERCENTAGE
LIEUTENANTS	39	.41
LIEUTENANT COMMANDERS	43	.45
COMMANDERS	13	.14
TOTALS	95	1.00

TABLE 19

TAR MANNING MIX APPLIED TO
ALL SQUADRON C-9 PILOTS

	CALCULATIONS	ADJUSTED NUMBER OF C-9 PILOTS
LIEUTENANTS	(330 X .41)	135
LIEUTENANT COMMANDERS	(330 X .45)	149
COMMANDERS	(330 X .14)	46
TOTALS	(330 X 1.00)	330

Figure 11 shows the relative proportion of all squadron C-9 pilots, by rank, assuming the TAR manning mix shown in Table 19.

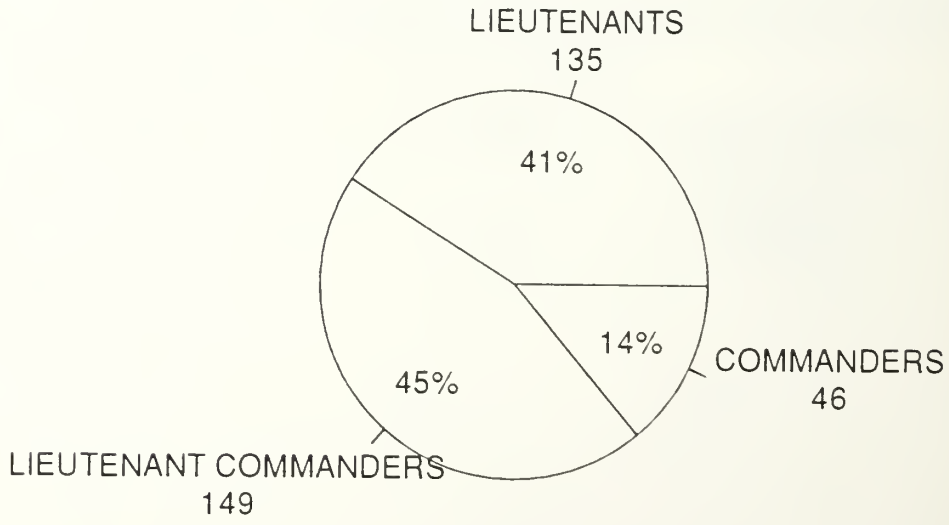

Figure 11, Number of C-9 Pilots Assuming a TAR Manning Mix.

Utilizing the data from Table 13 and Figure 11, the Average Annual Base Pay Cost of C-9 pilots, as reflected by the TAR manning mix, is determined to be $13,640,070. Table 20 and Figure 12 show the relative contribution of each rank to the total Average Annual Base Pay Cost of C-9 pilots.

TABLE 20

TOTAL AVERAGE ANNUAL BASE PAY COST OF C-9 PILOTS
ASSUMING A TAR MANNING MIX
(IN DOLLARS)

	ADJUSTED NUMBER OF C-9 PILOTS	AVERAGE ANNUAL BASE PAY COST	TOTAL
LIEUTENANTS	135	36,620.16	4,943,721.60
LIEUTENANT COMMANDERS	149	43,189.20	6,435,190.80
COMMANDERS	46	49,155.60	2,261,157.60
TOTALS	330		13,640,070.00

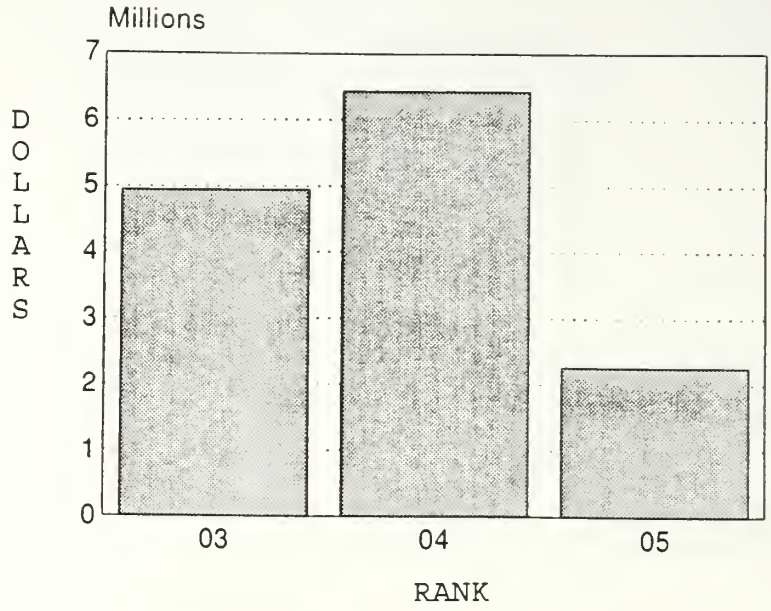

Figure 12, C-9 Pilots Average Annual Base Pay Cost by Rank, Assuming a TAR Manning Mix

G. DETERMINATION OF THE AVERAGE ANNUAL BASE PAY COST OF C-9 PILOTS ASSUMING A 10% REDUCTION OF THE TAR MANNING MIX

In this section the Average Annual Base Pay Cost of C-9 pilots will be determined assuming a 10% reduction to the TAR manning mix. This value is necessary and will be used later in this chapter in answering the primary research question. A 10% reduction to the TAR manning mix reflects the economies of scale that would be further realized by going to an all active duty C-9 community (i.e., having more full-time pilots would reduce the number of part-time pilots required). The 10% reduction to the TAR manning mix does not infer a change

to the current C-9 mission. However, the reduction was arbitrarily chosen to suggest some manning efficiencies which might be realized from an all active duty force. Table 21 shows the adjusted C-9 pilot manning distribution due to the 10% reduction of the TAR manning mix.

TABLE 21

10% REDUCTION OF THE
TAR MANNING MIX APPLIED TO
ALL SQUADRON C-9 PILOTS

	CALCULATIONS	ADJUSTED NUMBER OF C-9 PILOTS
LIEUTENANTS	(135 X .90)	122
LIEUTENANT COMMANDERS	(149 X .90)	134
COMMANDERS	(46 X .90)	41
TOTALS	(330 X .90)	297

Figure 13 shows the relative proportion of all squadron C-9 pilots, by rank, assuming a 10% reduction to the TAR manning mix shown in Table 21.

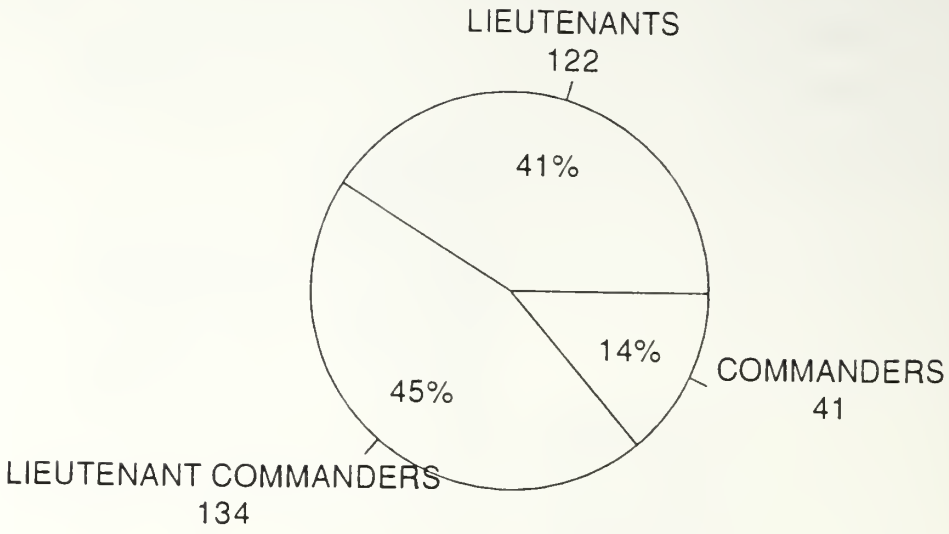

Figure 13, Number of C-9 Pilots Assuming a 10% Reduction to the TAR Manning Mix

Utilizing the data from Table 22 and Figure 13, the Average Annual Base Pay Cost of C-9 pilots, assuming a 10% reduction to the TAR manning mix, is determined to be $12,270,393. Table 22 and Figure 14 show the relative contribution of each rank to the total Average Annual Base Pay Cost of C-9 pilots.

TABLE 22

TOTAL AVERAGE ANNUAL BASE PAY COST OF C-9 PILOTS
ASSUMING A 10% REDUCTION TO
THE TAR MANNING MIX
(IN DOLLARS)

	ADJUSTED NUMBER OF C-9 PILOTS	AVERAGE ANNUAL BASE PAY COST	TOTAL
LIEUTENANTS	122	36,620.16	4,467,660
LIEUTENANT COMMANDERS	134	43,189.20	5,787,353
COMMANDERS	41	49,155.60	2,015,380
TOTALS	297		12,270,393

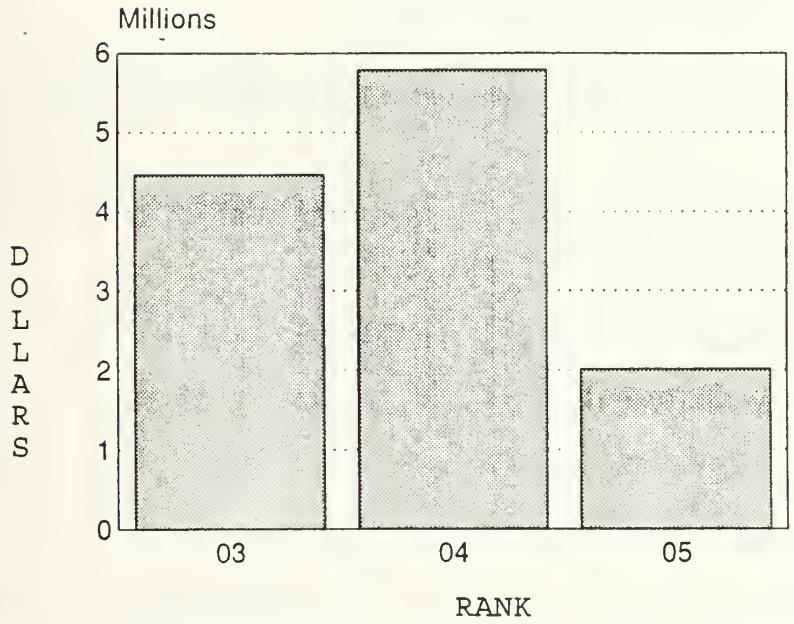

Figure 14, C-9 Pilots Average Annual Base Pay Cost Assuming a 10% Reduction to the TAR Manning Mix.

H. DETERMINATION OF THE AVERAGE ANNUAL BASE PAY COST SAVINGS ASSOCIATED WITH SELRES C-9 PILOTS EMPLOYED WITHIN THE C-9 community OF THE NAVAL AIR RESERVE

In this section the Annual Base Pay Cost Savings Associated with SELRES C-9 Pilots Employed within the C-9 community of the Naval Air Reserve will be determined for each of the three manning scenarios which were previously presented. This will be done by comparing the Annual Average Base Pay Cost of the present method of manning the C-9 squadrons (i.e., TAR and SELRES pilots) with the Annual Average Base Pay Cost of each of the three alternative manning scenarios developed in sections E, F and G. To recap:

1. Scenario ONE: All Active Duty Force.- assumes the same total number of officers (i.e., 330) and the same distribution among ranks as the present TAR/SELRES force, but assumes full-time active duty.

2. Scenario TWO: TAR Manning Force.- same as Scenario ONE except assumes the C-9 pilot distribution among officer ranks is the same as the present TAR distribution.

3. Scenario THREE: Reduced Manning Force.- same as Scenario TWO except assumes active duty manning reflects a 10% reduction in C-9 pilot manning.

1. Determination of the Average Annual Base Pay Cost Savings Associated with Manning Scenario ONE

In this subsection, the Average Annual Base Pay Cost Savings associated with manning Scenario ONE is determined. An Average Annual Base Pay Cost Savings of $6,291,647 is determined by subtracting the present Average Annual Base Pay Cost of $7,612,329 from the All Active Duty Average Annual

Base Pay Cost of $13,903,976. Table 23 and Figure 15 show the Average Annual Base Pay Cost Savings of each rank that is obtained utilizing TAR and SELRES manning. Figure 16 also shows the relative savings between the present method of TAR and SELRES manning and that of Scenario ONE.

TABLE 23

AVERAGE ANNUAL BASE PAY COST SAVINGS
OF NAVAL RESERVE C-9 PILOTS
(IN DOLLARS)

	SCENARIO ONE	PRESENT FORCE	SAVINGS
LIEUTENANTS	3,771,876	2,301,459	1,470,418
LIEUTENANT COMMANDERS	7,428,542	3,851,707	3,576,836
COMMANDERS	2,703,558	1,459,163	1,244,395
TOTALS	13,903,976	7,612,329	6,291,647

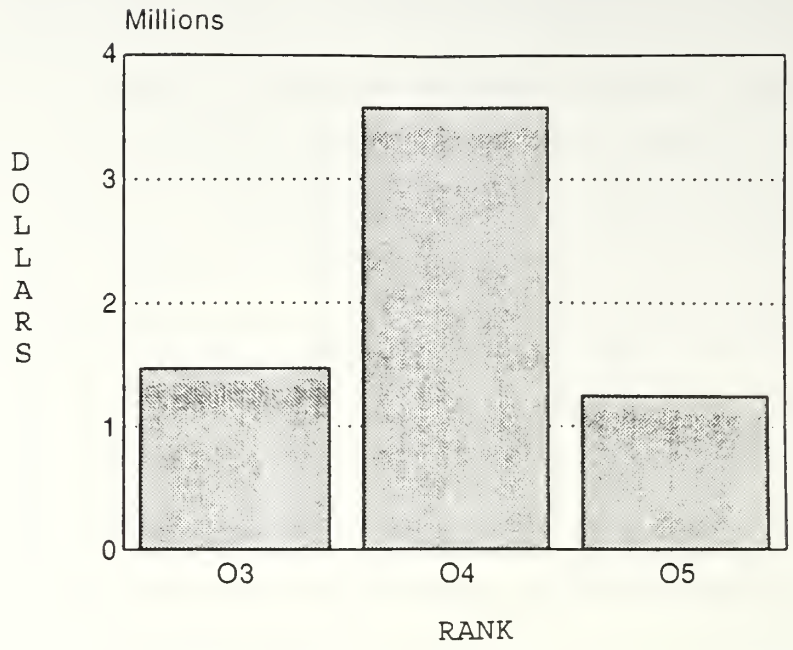

Figure 15, Average Annual Base Pay Cost Savings by Rank

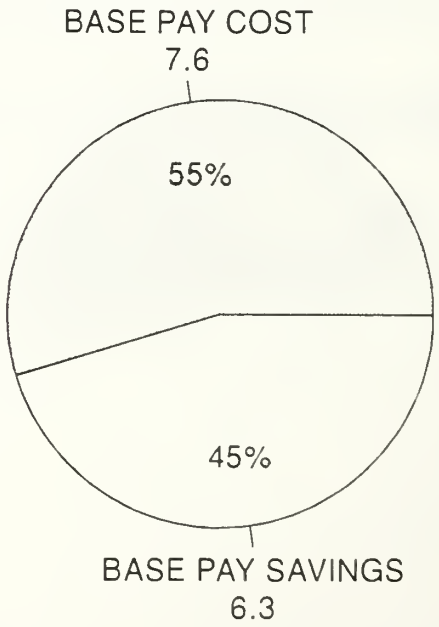

Figure 16, Average Annual Base Pay Cost Savings Relative to Scenario ONE Cost
(DOLLARS IN MILLIONS)

2. Determination of the Average Annual Base Pay Cost Savings Associated with Scenario TWO

In this subsection, the Average Annual Base Pay Cost Savings associated with manning Scenario TWO is determined. An Average Annual Base Pay Cost Savings of $6,027,742 is determined by subtracting the present Average Annual Base Pay Cost of $7,612,329 from the TAR manning Average Annual Base Pay Cost of $13,640,071. Table 24 and Figure 17 show the Average Annual Base Pay Cost Savings of each rank when compared to the present TAR and SELRES manning. Figure 18 also shows the relative Average Annual Base Pay Cost Savings between the present method of TAR and SELRES manning and that of Scenario TWO.

TABLE 24

AVERAGE ANNUAL BASE PAY COST SAVINGS
OF NAVAL RESERVE C-9 PILOTS
(IN DOLLARS)

	SCENARIO TWO	PRESENT FORCE	SAVINGS
LIEUTENANTS	4,943,722	2,301,459	2,642,263
LIEUTENANT COMMANDERS	6,435,191	3,851,707	2,583,484
COMMANDERS	2,261,158	1,459,163	801,995
TOTALS	13,640,071	7,612,329	6,027,742

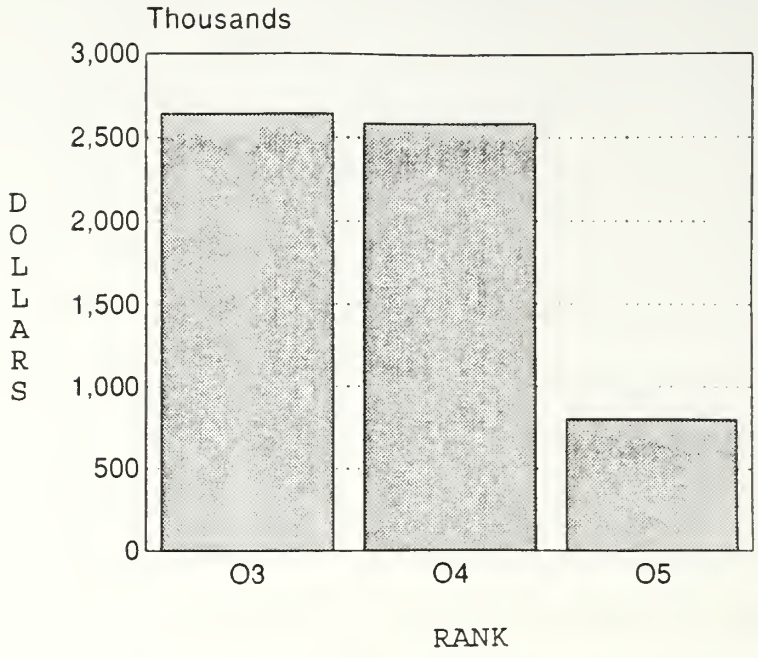

Figure 17, Average Annual Base Pay Cost Savings by Rank

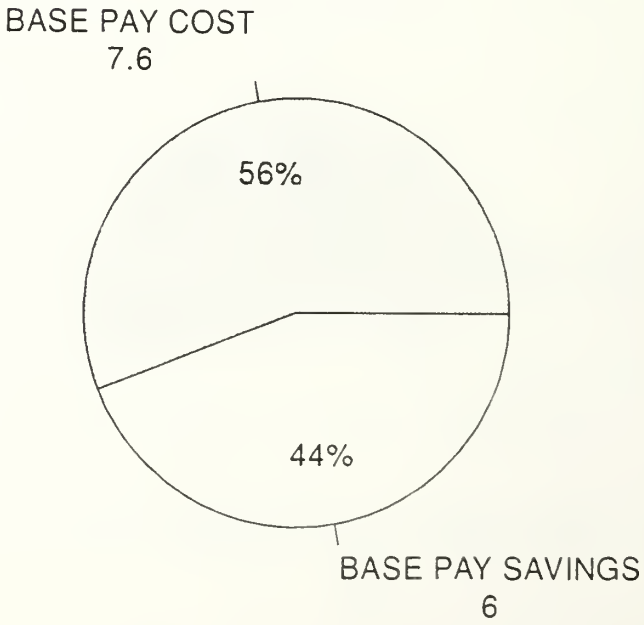

Figure 18, Average Annual Base Pay Cost Savings Relative to Scenario TWO Cost
(DOLLARS IN MILLIONS)

3. Determination of the Average Annual Base Pay Cost Savings Associated with Scenario THREE

In this subsection, the Average Annual Base Pay Cost Savings associated with manning Scenario THREE is determined. An Average Annual Base Pay Cost Savings of $4,658,064 is determined by subtracting the present Average Annual Base Pay Cost of $7,612,329 from the reduced manning Average Annual Base Pay Cost of $12,270,393. Table 25 and Figure 19 show the Average Annual Base Pay Cost Savings of each rank that is obtained relative to the present TAR and SELRES manning. Figure 20 also shows the relative Average Annual Base Pay Cost Savings between the present method of TAR and SELRES manning and that of Scenario THREE.

TABLE 25

AVERAGE ANNUAL BASE PAY COST SAVINGS
OF NAVAL RESERVE C-9 PILOTS
(IN DOLLARS)

	SCENARIO THREE FORCE	PRESENT FORCE	SAVINGS
LIEUTENANTS	4,467,660	2,301,459	2,166,201
LIEUTENANT COMMANDERS	5,787,353	3,851,707	1,935,646
COMMANDERS	2,015,380	1,459,163	556,217
TOTALS	12,270,393	7,612,329	4,658,064

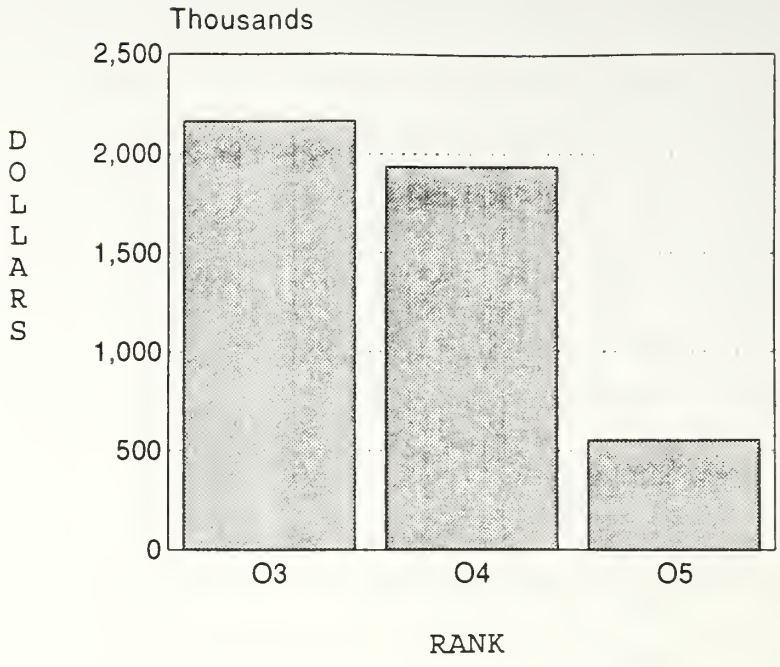

Figure 19, Average Annual Base Pay Cost Savings by Rank

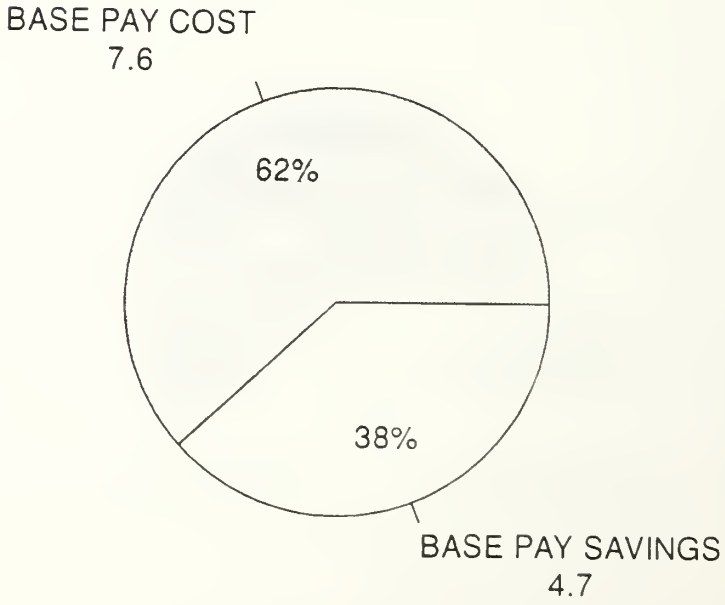

Figure 20, Average Annual Base Pay Cost Savings Relative to Scenario THREE
(DOLLARS IN MILLIONS)

I. DETERMINATION OF THE NUMBER OF ACTIVE DUTY PILOTS THAT CAN BE OBTAINED FOR THE SAME AVERAGE ANNUAL BASE PAY COST AS THE PRESENT TAR/SELRES C-9 PILOT FORCE

What if the Navy was to shift to an all active duty force with no change in the present base pay cost budget? What would that mean in terms of the number of pilots available and the ability to conduct missions? In this section, the number of active duty pilots that can be obtained for the same Average Annual Base Pay Cost as the present TAR/SELRES manning will be determined. In other words, how many full-time active duty pilots can be acquired for $7,612,329, assuming that the number of pilots determined will reflect the same percentages of rank as the TAR manning mix described in Section F of this chapter. Table 26 shows data to be used in this section which was presented earlier in Section F.

TABLE 26

NUMBER OF SQUADRON C-9 PILOTS
(TAR MANNING MIX)
(IN DOLLARS)

	NUMBER OF PILOTS	RELATIVE PERCENTAGE	AABPC PER PILOT
LIEUTENANTS	135	.41	36,620.16
LIEUTENANT COMMANDERS	149	.45	43,189.20
COMMANDERS	46	.14	49,155.60
TOTALS	330	1.00	

Utilizing the data presented in Table 26, the number of active duty pilots that can be obtained for the same Average Annual Base Pay Cost as the present TAR/SELRES force ($7,612,329) is calculated as follows:

$$TSCOST = (NADP \times AABPCO3 \times RPO3) + (NADP \times AABPCO4 \times RPO4) + (NADP \times AABPCO5 \times RPO5)$$

where, TSCOST = TAR and SELRES Cost (i.e., present method)

NADP = Number of Active Duty Pilots

AABPCO3 = AABPC of a Lieutenant

AABPCO4 = AABPC of a Lieutenant Commander

AABPCO5 = AABPC of a Commander

RPO3 = Relative Percentage of Lieutenants

RPO4 = Relative Percentage of Lieutenant Commanders

RPO5 = Relative Percentage of Commanders

letting, D1 = (AABPCO3 x RPO3)

D2 = (AABPCO4 x RPO4)

D3 = (AABPCO5 x RPO5)

the above equation is simplified to,

$$NADP = TSCOST / [D1 + D2 + D3]$$

substituting numerical values for the variables above,

D1 = (36,620.16 x .41)

D2 = (43,189.20 x .45)

D3 = (49,155.60 x .14)

TSCOST = 7,612,329

solving for NADP,

NADP = 7,612,329 / [15,014.27 + 19,435.14 + 6,881.78]

NADP = 184 pilots

As calculated, the number of active duty pilots that can be obtained for the same Average Annual Base Pay Cost as the present TAR/SELRES manning equals 184 pilots. The 184 pilots represent a reduction to the present TAR/SELRES force of 146 (330 - 184) qualified, trained, and experienced pilots. Table 27 and Figure 21 show the relative reductions to the present TAR and SELRES C-9 pilot manning.

TABLE 27

	PRESENT TAR FORCE	PRESENT SELRES FORCE	ALL ACTIVE DUTY	CHANGE TO PRESENT FORCE
LIEUTENANTS	39	64	75	-28
LIEUTENANT COMMANDERS	43	129	83	-89
COMMANDERS	13	42	26	-29
TOTALS	95	235	184	-146

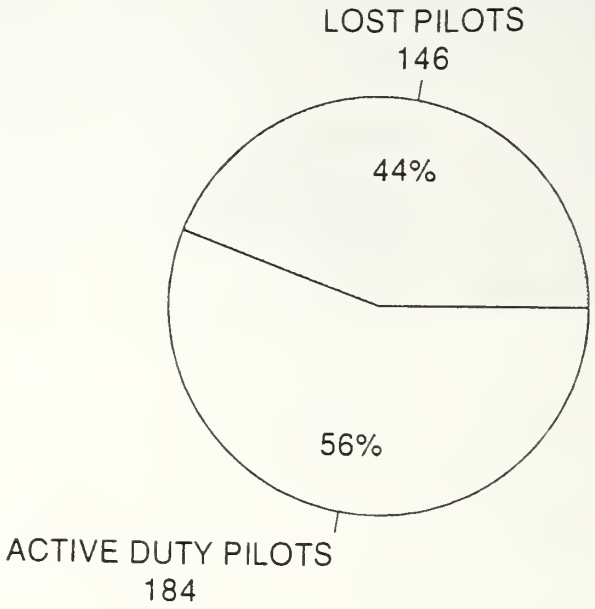

Figure 21, Percent Reductions to the Present TAR/SELRES Pilot Manning

As shown in Figure 21, it would be necessary to reduce the present TAR/SELRES C-9 pilot force by 44% (i.e., 146 pilots) to obtain an all active duty C-9 pilot force for the same Average Annual Base Pay Cost of $7,612,329.

Although the Average Annual Base Pay Cost of the present TAR/SELRES force and that of the all active duty force presented in this section would be the same, the C-9 community would be unable to perform at its present level of flight tasking. This would obviously be due to the exorbitant loss of 146 highly skilled, trained, and proficient pilots.

J. SUMMARY OF CHAPTER III

In this chapter, the Average Annual Base Pay Cost Savings Associated with SELRES C-9 pilots was determined for three different C-9 pilot manning scenarios. Data obtained from 11 squadron questionnaires was utilized along with the Average Annual Base Pay Cost values from Chapter II to obtain the Average Annual Base Pay Costs of three possible alternative C-9 pilot manning scenarios (i.e., TAR and SELRES vs All Active Duty, vs TAR manning mix, and vs 10% reduction to the TAR manning mix). These costs were compared to the Average Annual Base Pay Cost of the present method of TAR and SELRES C-9 pilot manning which resulted in Average Annual Base Pay Cost Savings ranging from 4.7 to 6.3 million dollars. The Average Annual Base Pay Cost Savings and relative percent savings are summarized in Table 28 for the three different C-9 pilot manning scenarios which were presented in this chapter.

TABLE 28

SUMMARY OF BASE PAY COST SAVINGS
(MILLIONS OF DOLLARS)

	SCENARIO ONE	SCENARIO TWO	SCENARIO THREE
SAVINGS	6.3	6.0	4.7
PERCENT SAVINGS	.45	.44	.38

The number of active duty pilots that can be obtained for the same Average Annual Base Pay Cost as the present TAR/SELRES force was determined to be 184. Although the Average Annual Base Pay Cost would be the same, a reduction of this magnitude would result in the loss of 146 (i.e., 44.2%) highly skilled and experienced C-9 pilots and would severely reduce the C-9 community's ability to perform its mission.

The next chapter, Chapter IV, will identify and present some other cost savings and direct benefits that are gained through the employment of SELRES C-9 pilots within the C-9 community of the Naval Air Reserve.

IV. ADDITIONAL COST SAVINGS AND BENEFITS ASSOCIATED WITH SELRES C-9 PILOTS

In this chapter, the secondary research question will be answered. As stated in Chapter I, the secondary research question is:

What Additional Cost Savings and Direct Benefits can be Gained Through the Employment of Selective Reserve Pilots within the C-9 community of the Naval Air Reserve when compared to an All Active Duty C-9 community?

This chapter consists of three sections which are labeled A through C, respectively. In the first section the average annual cost savings associated with compensation and benefits will be presented. These include Basic Allowance for Quarters, Variable Housing Allowance, Basic Allowance for Subsistence, Pilot Flight Pay, and Retirement Pay. In the second section the Average Annual Airline Flight Time Benefits which are gained through the SELRES pilots who are also airline pilots will be presented. The third and final section will summarize the chapter.

A. ADDITIONAL COST SAVINGS RELATED TO PAY BENEFITS AND ALLOWANCE ENTITLEMENTS

This section presents and quantifies some additional average annual cost savings comparing the present TAR/SELRES force with that of the 10% reduction to the TAR manning mix

given an all active duty C-9 community. This section is divided into five subsections. Each subsection presents a specific cost savings category as follows:

1. Basic Allowance for Quarters
2. Variable Housing Allowance
3. Basic Allowance for Subsistence
4. Aviation Career Incentive Pay
5. Retirement Pay

1. Savings Associated with Basic Allowance for Quarters

This subsection presents and quantifies the average annual cost savings associated with Basic Allowance for Quarters (BAQ). Basic Allowance for Quarters is an amount of money prescribed and limited by law which an officer receives to pay for quarters not provided by the Government [Ref. 6:p. 530]. BAQ varies depending on a military member's rank and whether or not he/she is entitled to Full, Partial, or Full with Dependents BAQ. For the cost savings determined in this subsection, it is assumed that each C-9 pilot does not live in Government Housing and is entitled to receive Full with Dependents BAQ. This assumption is reasonable because the majority of C-9 pilots live off base and are married or have been married. Those pilots who are no longer married but have children are still entitled to Full BAQ with Dependents. Table 29 presents the monthly and yearly cost data pertaining to Basic Allowance for Quarters [Ref. 4].

TABLE 29

BASIC ALLOWANCE FOR QUARTERS
(IN DOLLARS)

	MONTHLY	YEARLY
LIEUTENANT	557.10	6,685.20
LIEUTENANT COMMANDER	673.20	8,078.40
COMMANDER	763.50	9,162.00

SELRES C-9 pilots are only authorized to receive BAQ during ACDUTRA and when flying on Additional Days of Duty for Flights. BAQ is not earned while performing Drills. Since BAQ is not earned for each Day of Pay presented in Table 4A of Chapter II, an adjustment to Days of Pay is necessary. Table 30 presents the adjustments (i.e., reductions) to the Days of Pay presented in Table 4A of Chapter II.

TABLE 30

AVERAGE DAYS OF PAY ADJUSTED FOR DRILLS

	AVERAGE DAYS OF PAY	ADJUSTMENT FOR DRILLS	ADJUSTED AVERAGE DAYS OF PAY
LIEUTENANTS	136	-108	28
LIEUTENANT COMMANDERS	131	-108	23
COMMANDERS	145	-120	25

Table 31 presents the relative annual percentage of Days of Pay for SELRES C-9 pilots. The relative average annual percentages of days paid in Table 31 are required to accurately account for BAQ cost savings on an annual basis.

TABLE 31

AVERAGE ANNUAL
RELATIVE PERCENTAGE OF DAYS PAID
(SELRES C-9 PILOTS)

	ADJUSTED DAYS OF PAY	CALCULATIONS	AVERAGE ANNUAL RELATIVE PERCENTAGE OF DAYS PAID
LIEUTENANT	28	(28/365)	.077
LIEUTENANT COMMANDER	23	(23/365)	.063
COMMANDER	25	(25/365)	.068

Table 32 presents the Average Annual BAQ Cost of individual SELRES C-9 pilots by rank. These values were determined using data from Tables 29 and 31.

TABLE 32

AVERAGE ANNUAL BAQ COSTS FOR
INDIVIDUAL SELRES C-9 PILOTS BY RANK
(IN DOLLARS)

	BAQ FULL WITH DEPENDENTS	AVERAGE ANNUAL RELATIVE PERCENTAGE OF DAYS PAID	AVERAGE ANNUAL BAQ COST
LIEUTENANT	6,685.20	.077	514.76
LIEUTENANT COMMANDER	8,078.40	.063	508.94
COMMANDER	9,162.00	.068	623.02

Table 33 presents the Total Average Annual BAQ Cost of the present SELRES C-9 pilot force by rank. The Total Average Annual BAQ Cost was determined by multiplying the present number of SELRES C-9 pilots by the Average Annual BAQ with Dependents Costs determined in Table 32.

TABLE 33

TOTAL AVERAGE ANNUAL BAQ COST
FOR SELRES C-9 PILOTS
(IN DOLLARS)

	PRESENT SELRES FORCE	AVERAGE ANNUAL BAQ COST	TOTAL AVERAGE ANNUAL BAQ COST
LIEUTENANTS	64	514.76	32,944.64
LIEUTENANT COMMANDERS	129	508.94	65,653.26
COMMANDERS	42	623.02	26,166.84
TOTALS	235		124,764.74

Table 34 presents the Total Average Annual BAQ Cost of TAR C-9 pilots.

TABLE 34

TOTAL AVERAGE ANNUAL BAQ COST
FOR TAR C-9 PILOTS
(IN DOLLARS)

	PRESENT TAR FORCE	ANNUAL BAQ COST	TOTAL ANNUAL BAQ COST
LIEUTENANTS	39	6,685.20	260,722.80
LIEUTENANT COMMANDERS	43	8,078.40	347,371.20
COMMANDERS	13	9,162.00	119,106.00
TOTALS	95		727,200.00

Table 35 presents the Total Average Annual BAQ Cost of the present method of TAR and SELRES manning. The Total Average Annual BAQ Cost values were determined by combining the TAR and SELRES BAQ costs presented in Tables 33 and 34.

TABLE 35

TOTAL AVERAGE ANNUAL BAQ COST
FOR TAR AND SELRES C-9 PILOTS
(IN DOLLARS)

	TAR	SELRES	TOTAL COST
LIEUTENANTS	260,722.80	32,944.64	293,668
LIEUTENANT COMMANDERS	347,371.20	65,653.26	413,024
COMMANDERS	119,106.00	26,166.84	145,273
TOTALS	727,200.00	124,764.74	851,965

Table 36 presents the Total Average Annual BAQ Cost for Scenario THREE manning. To recap: Scenario THREE manning represents an All Active Duty Force which reflects a 10% reduction to the TAR manning mix.

TABLE 36

TOTAL AVERAGE ANNUAL BAQ COST
FOR SCENARIO THREE
(ALL ACTIVE DUTY C-9 PILOTS)
(IN DOLLARS)

	SCENARIO THREE FORCE	ANNUAL BAQ COST	TOTAL ANNUAL BAQ COST
LIEUTENANTS	122	6,685.20	815,594
LIEUTENANT COMMANDERS	134	8,078.40	1,082,506
COMMANDERS	41	9,162.00	375,642
TOTALS	297		2,273,742

Table 37 and Figure 22 show the Average Annual BAQ Cost Savings of each rank that is obtained utilizing TAR and SELRES manning. Figure 23 also shows the relative BAQ Cost Savings between the present method of TAR and SELRES manning and that of Scenario THREE.

TABLE 37

AVERAGE ANNUAL BAQ COST SAVINGS
(IN DOLLARS)

	SCENARIO THREE FORCE	PRESENT FORCE	SAVINGS
LIEUTENANTS	815,594	293,668	521,926
LIEUTENANT COMMANDERS	1,082,506	413,024	669,482
COMMANDERS	375,642	145,273	230,369
TOTALS	2,273,742	851,965	1,421,777

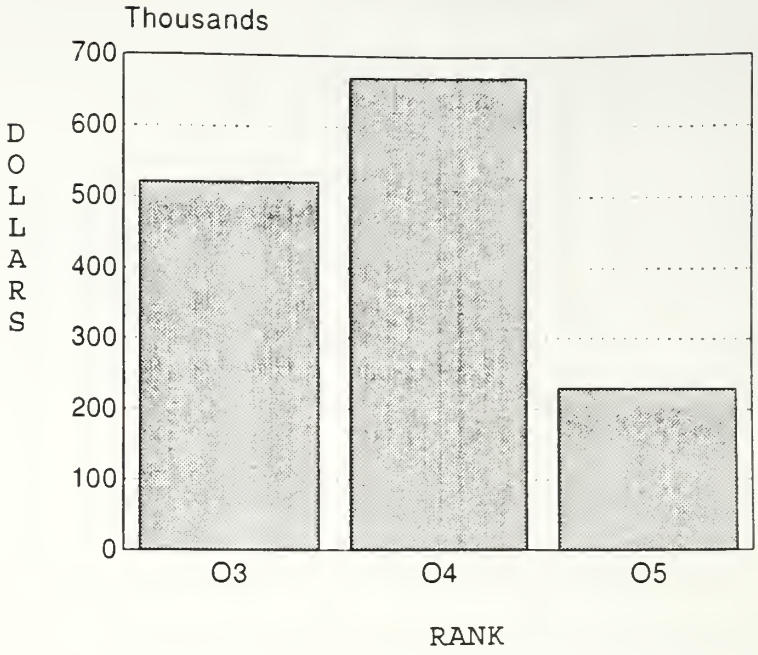

Figure 22, Average Annual BAQ Cost Savings by Rank

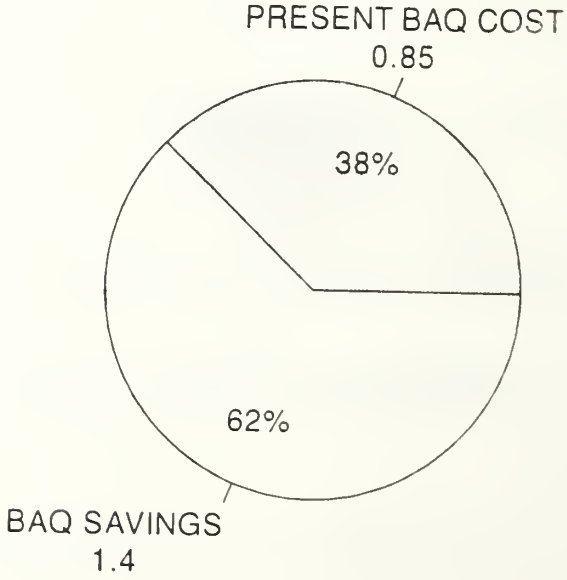

Figure 23, Average Annual BAQ Cost Savings
Relative to Scenario THREE Cost
(DOLLARS IN MILLIONS)

In summary, the Navy's present C-9 pilot force realizes an Average Annual BAQ Cost Savings of 1.4 million dollars when compared to the all active duty force described in Scenario THREE.

2. Savings Associated with Variable Housing Allowance

This section presents and quantifies average annual cost savings associated with Variable Housing Allowance (VHA). Variable Housing Allowance is a supplement to BAQ which takes into account the average cost of housing pertaining to a particular geographical area. VHA is authorized only for active duty military personnel. The SELRES C-9 pilots do not receive VHA.

Table 38 lists the current and average VHA rates by rank for the 11 locations where C-9 squadrons are located [Ref. 4]. Since VHA rates vary from location to location, the average VHA rate shown in Table 38 will be used for all VHA calculations in this subsection.

TABLE 38

MONTHLY VHA RATES BY RANK FOR CITIES WHERE
C-9 SQUADRONS ARE LOCATED
(IN DOLLARS)

CITY	LIEUTENANT	LIEUTENANT COMMANDER	COMMANDER
ALAMEDA, CA	727.15	866.72	855.20
ATLANTA, GA	158.25	156.05	101.32
DALLAS, TX	228.87	220.26	214.61
DETROIT, MI	304.20	343.39	330.12
GLENVIEW, IL	331.59	330.12	349.21
JACKSONVILLE, FL	169.88	203.95	174.81
MEMPHIS, TN	82.71	117.94	139.83
NORFOLK, VA	199.96	205.01	239.26
NORTH ISLAND, CA	371.80	439.37	487.25
WHIDBEY ISLAND, WA	175.95	160.34	119.13
WILLOW GROVE, PA	392.49	428.60	426.77
MONTHLY AVERAGES	285.71	315.61	316.59
ANNUAL AVERAGES	3,428.52	3,787.32	3,799.08

Table 39 presents the Total Average Annual VHA Cost for the present force of TAR C-9 pilots.

TABLE 39

TOTAL AVERAGE ANNUAL VHA COST
FOR TAR C-9 PILOTS
(IN DOLLARS)

	PRESENT TAR FORCE	AVERAGE ANNUAL VHA COST	TOTAL AVERAGE ANNUAL VHA COST
LIEUTENANTS	39	3,428.52	133,712
LIEUTENANT COMMANDERS	43	3,787.32	162,855
COMMANDERS	13	3,799.08	49,388
TOTALS	95		345,955

Table 40 presents the Total Average Annual VHA Cost for Scenario THREE manning.

TABLE 40

TOTAL AVERAGE ANNUAL VHA COST
FOR SCENARIO THREE
(ALL ACTIVE DUTY C-9 PILOTS)
(IN DOLLARS)

	SCENARIO THREE FORCE	AVERAGE ANNUAL VHA COST	TOTAL AVERAGE ANNUAL VHA COST
LIEUTENANTS	122	3,428.52	418,279
LIEUTENANT COMMANDERS	134	3,787.32	507,501
COMMANDERS	41	3,799.08	155,762
TOTALS	297		1,081,542

Table 41 and Figure 24 show the Average Annual VHA Cost Savings of each rank that is obtained utilizing TAR and SELRES manning. Figure 25 also shows the relative VHA Cost Savings between the present method of TAR and SELRES manning and that of Scenario THREE.

TABLE 41

AVERAGE ANNUAL VHA COST SAVINGS
(IN DOLLARS)

	SCENARIO THREE FORCE	PRESENT FORCE	SAVINGS
LIEUTENANTS	418,279	133,712	284,567
LIEUTENANT COMMANDERS	507,501	162,855	344,646
COMMANDERS	155,762	49,388	106,374
TOTALS	1,081,542	345,955	735,587

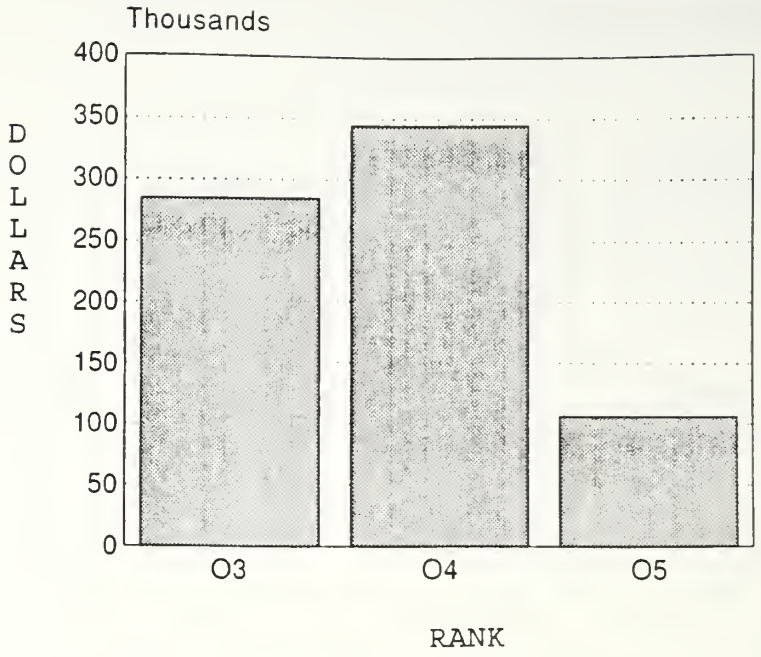

Figure 24, Average Annual VHA Cost Savings by Rank

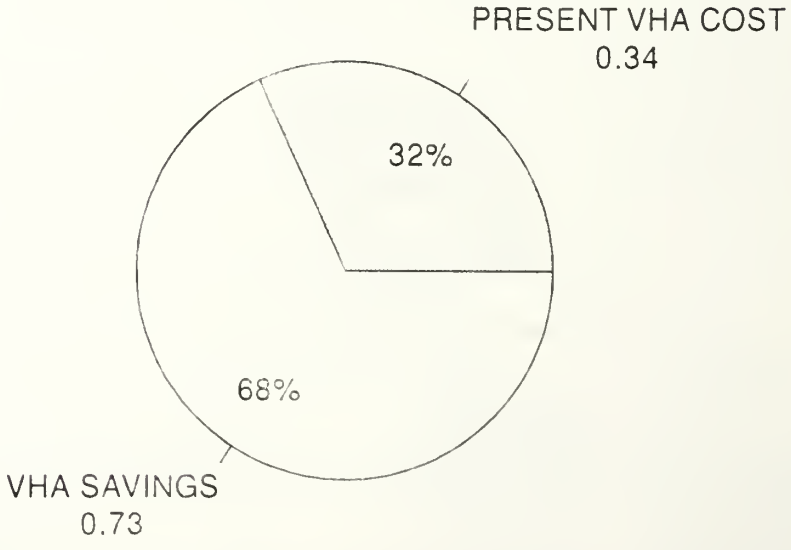

Figure 25, Average Annual VHA Cost Savings
Relative to Scenario THREE Cost
(DOLLARS IN MILLIONS)

In summary, the Navy's present C-9 pilot force realizes an Average Annual VHA Cost Savings of .7 million dollars when compared to the all active duty force described in Scenario THREE.

3. Savings Associated with Basic Allowance for Subsistence

This subsection presents and quantifies the average annual cost savings associated with Basic Allowance for Subsistence (BAS). Basic Allowance for Subsistence is a cash allowance to help reimburse a military member for the expense of subsisting [Ref. 6:p. 529]. BAS does not vary among officers by rank or years of military service. The current amount of BAS an officer is entitled to is $139.39 per month or $1,672.68 per year [Ref. 4].

Table 42 presents the individual Average Annual BAS Cost for SELRES C-9 pilots by rank.

TABLE 42

AVERAGE ANNUAL BASIC ALLOWANCE
FOR SUBSISTENCE COST
FOR SELRES C-9 PILOTS
(IN DOLLARS)

	AVERAGE ANNUAL RELATIVE PERCENTAGE OF DAYS PAID	CALCULATIONS	AVERAGE ANNUAL BAS COST
LIEUTENANT	.077	(.077 x 1,672.68)	128.80
LIEUTENANT COMMANDER	.063	(.063 x 1,672.68)	105.38
COMMANDER	.068	(.068 x 1,672.68)	113.74

Table 43 presents the Total Average Annual BAS Cost for SELRES C-9 pilots.

TABLE 43

TOTAL AVERAGE ANNUAL BAS COST
FOR SELRES C-9 PILOTS
(IN DOLLARS)

	PRESENT SELRES FORCE	AVERAGE ANNUAL BAS COST	TOTAL AVERAGE ANNUAL BAS COST
LIEUTENANTS	64	128.80	8,243
LIEUTENANT COMMANDERS	129	105.38	13,594
COMMANDERS	42	113.74	4,777
TOTALS	235		26,614

Table 44 presents the Total Average Annual BAS Cost for TAR C-9 pilots.

TABLE 44

TOTAL AVERAGE ANNUAL BAS COST
FOR TAR C-9 PILOTS
(IN DOLLARS)

	PRESENT TAR FORCE	AVERAGE ANNUAL BAS COST	TOTAL AVERAGE ANNUAL BAS COST
LIEUTENANTS	39	1,672.68	65,235
LIEUTENANT COMMANDERS	43	1,672.68	71,925
COMMANDERS	13	1,672.68	21,745
TOTALS	95		158,905

Table 45 presents the Total Average Annual BAS Cost of the present method of TAR and SELRES manning. The Total Average Annual BAS Cost value was determined by combining the TAR and SELRES BAS costs presented in Tables 43 and 44.

TABLE 45

TOTAL AVERAGE ANNUAL BAS COST
FOR TAR AND SELRES C-9 PILOTS
(IN DOLLARS)

	TAR	SELRES	TOTAL COST
LIEUTENANTS	65,235	8,243	73,478
LIEUTENANT COMMANDERS	71,925	13,594	85,519
COMMANDERS	21,745	4,777	26,522
TOTALS	158,905	26,614	185,519

Table 46 presents the Total Average Annual BAS Cost for Scenario THREE manning.

TABLE 46

TOTAL AVERAGE ANNUAL BAS COST
FOR SCENARIO THREE
(ALL ACTIVE DUTY C-9 PILOTS)
(IN DOLLARS)

	SCENARIO THREE FORCE	ANNUAL BAS COST	TOTAL ANNUAL BAS COST
LIEUTENANTS	122	1,672.68	204,067
LIEUTENANT COMMANDERS	134	1,672.68	224,139
COMMANDERS	41	1,672.68	68,580
TOTALS	297		496,786

Table 47 and Figure 26 show the Average Annual BAS Cost Savings of each rank that is obtained utilizing TAR and SELRES manning. Figure 27 also shows the relative BAS Cost Savings between the present method of TAR and SELRES manning and that of Scenario THREE.

TABLE 47

AVERAGE ANNUAL BAS COST SAVINGS
(IN DOLLARS)

	SCENARIO THREE FORCE	PRESENT FORCE	SAVINGS
LIEUTENANTS	204,067	73,478	130,589
LIEUTENANT COMMANDERS	224,139	85,519	138,620
COMMANDERS	68,580	26,522	42,058
TOTALS	496,786	185,519	311,267

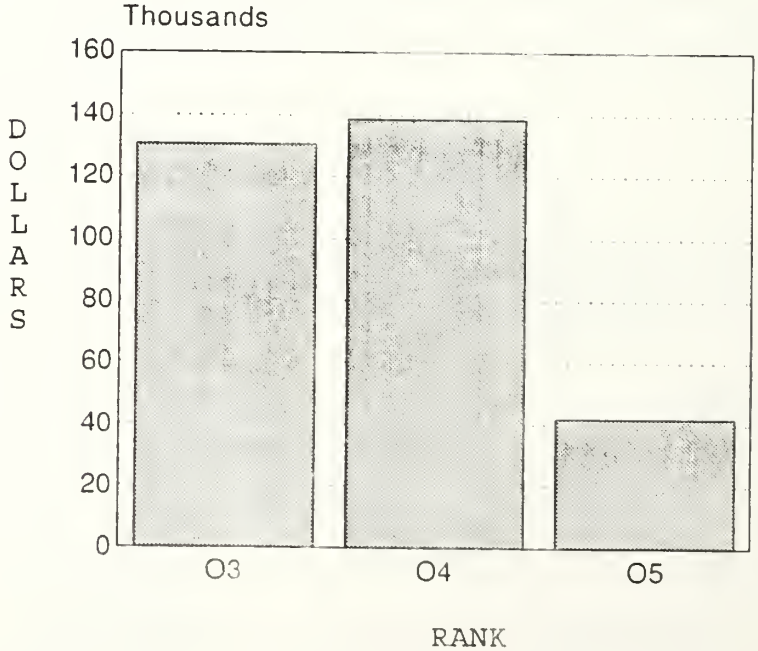

Figure 26, Average Annual BAS Cost Savings by Rank

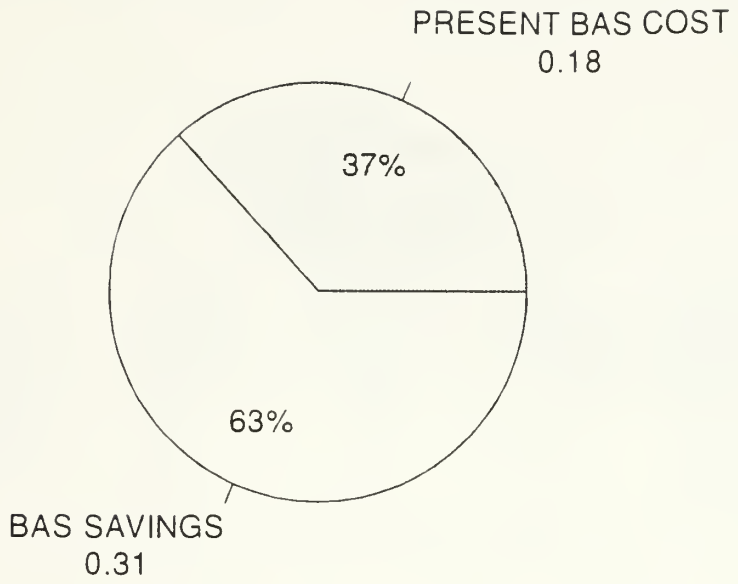

Figure 27, Average Annual BAS Cost Savings Relative to Scenario THREE Cost (DOLLARS IN MILLIONS)

In summary, the Navy's present C-9 pilot force realizes an Average Annual BAS Cost Savings of .3 million dollars when compared to the all active duty force described in Scenario THREE.

4. Savings Associated with Aviation Career Incentive Pay

This subsection presents and quantifies average annual cost savings associated with Aviation Career Incentive Pay (ACIP). Aviation Career Incentive Pay is often referred to as Flight Pay. Flight Pay is an authorized entitlement for all Navy C-9 pilots who are currently on flight status. Flight

Pay is earned in conjunction with each day of pay earned. For each drill or day of duty performed, a SELRES C-9 pilot earns a days worth of Flight Pay. Table 48 presents current Flight Pay Data [Ref. 6:p. 175].

TABLE 48

AVIATION CAREER INCENTIVE PAY
(IN DOLLARS)

YEARS OF SERVICE	MONTHLY	YEARLY	DAILY
6 - 17	650	7,800	21.34
18 - 20	585	7,020	19.23
AVERAGES	617.50	7,410	20.30

For calculation purposes, it is assumed that all C-9 pilots have between six and 20 years of service and that Lieutenants and Lieutenant Commanders receive $650 per month. It is also assumed that Commanders receive an average monthly amount of $617.50 since their years of service will overlap both Flight Pay rate categories. Commanders receive less Flight Pay during their 19th and 20th years because it is assumed that higher ranking aviation officers (i.e., Commanders) do not fly as much since they tend to be assigned to management positions. It is assumed that Lieutenant Commanders who fail to promote to Commander, do not remain assigned to a C-9 squadron past 17 years; therefore, all Lieutenant Commanders are included in the 6 - 17 years of service category and thus considered eligible for $650.00 per month.

Table 49 presents the Total Average Annual Flight Pay Costs of SELRES C-9 pilots by rank.

TABLE 49

TOTAL AVERAGE ANNUAL FLIGHT PAY COSTS
OF SELRES C-9 PILOTS
(IN DOLLARS)

	PRESENT SELRES FORCE	AVERAGE DAYS FLOWN	DAILY FLIGHT PAY	AVERAGE ANNUAL FLIGHT PAY
LIEUTENANTS	64	136	21.34	185,743
LIEUTENANT COMMANDERS	129	131	21.34	360,625
COMMANDERS	42	145	20.30	123,627
TOTALS	235			669,995

Table 50 presents the Total Average Annual Flight Pay Costs of TAR C-9 pilots.

TABLE 50

TOTAL AVERAGE ANNUAL FLIGHT PAY COST
FOR TAR C-9 PILOTS
(IN DOLLARS)

	PRESENT TAR FORCE	ANNUAL FLIGHT PAY	AVERAGE ANNUAL FLIGHT PAY
LIEUTENANTS	39	7,800	304,200
LIEUTENANT COMMANDERS	43	7,800	335,400
COMMANDERS	13	7,410	96,330
TOTALS	95		735,930

Table 51 presents the Total Average Annual Flight Pay Cost of the present method of TAR and SELRES manning. The Total Average Annual Flight Pay Cost values were determined by combining the TAR and SELRES Flight Pay Costs presented in Tables 49 and 50.

TABLE 51

TOTAL AVERAGE ANNUAL FLIGHT PAY COST
(TAR AND SELRES C-9 PILOTS)
(IN DOLLARS)

	TAR	SELRES	TOTAL COST
LIEUTENANTS	304,200	185,743	489,943
LIEUTENANT COMMANDERS	335,400	360,625	696,025
COMMANDERS	96,330	123,627	219,957
TOTALS	735,930	669,995	1,405,925

Table 52 presents the Total Average Annual Flight Pay Cost for Scenario THREE manning.

TABLE 52

TOTAL AVERAGE ANNUAL FLIGHT PAY COST
FOR SCENARIO THREE
(ALL ACTIVE DUTY C-9 PILOTS)
(IN DOLLARS)

	SCENARIO THREE FORCE	ANNUAL FLIGHT PAY COST	TOTAL ANNUAL FLIGHT PAY COST
LIEUTENANTS	122	7,800	951,600
LIEUTENANT COMMANDERS	134	7,800	1,045,200
COMMANDERS	41	7,410	303,810
TOTALS	297		2,300,610

Table 53 and Figure 28 show the Average Annual Flight Pay Cost Savings of each rank that is obtained utilizing TAR and SELRES manning. Figure 29 also shows the relative Flight Pay Cost Savings between the present method of TAR and SELRES manning and that of Scenario THREE.

TABLE 53

AVERAGE ANNUAL FLIGHT PAY COST SAVINGS
(IN DOLLARS)

	SCENARIO THREE FORCE	PRESENT FORCE	SAVINGS
LIEUTENANTS	951,600	489,943	461,657
LIEUTENANT COMMANDERS	1,045,200	696,025	349,175
COMMANDERS	303,810	219,957	83,853
TOTALS	2,300,610	1,405,925	894,685

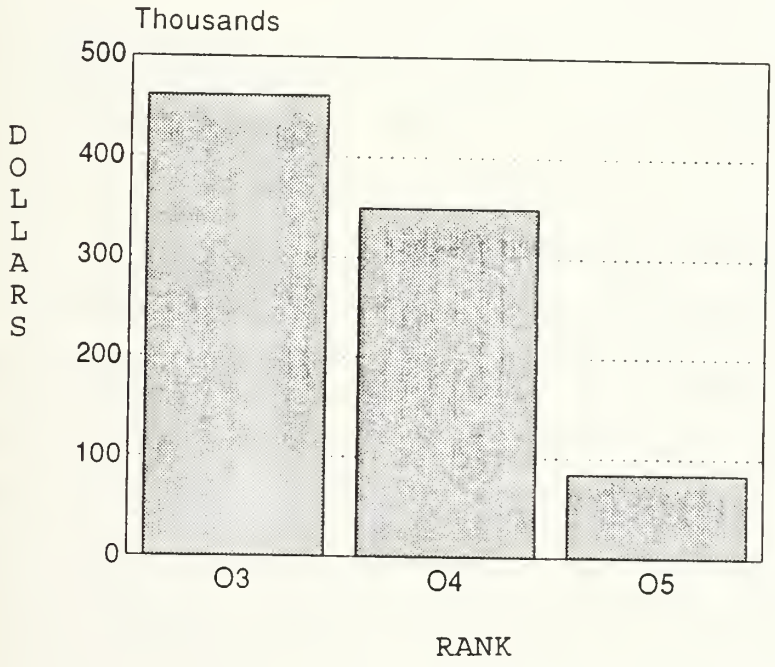

Figure 28, Average Annual Flight Pay Cost Savings by Rank

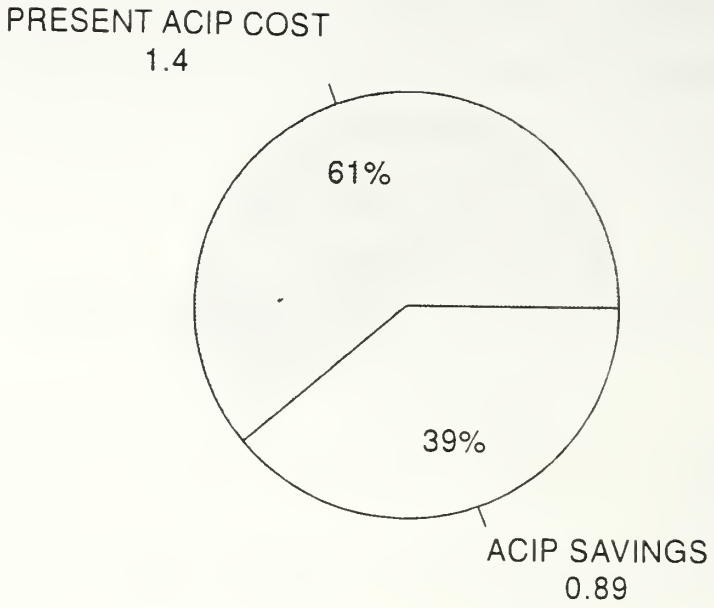

Figure 29, Average Annual Flight Pay Cost Savings Relative to Scenario THREE Cost (DOLLARS IN MILLIONS)

In summary, the Navy's present C-9 pilot force realizes an Average Annual Flight Pay Cost Savings of .9 million dollars when compared to the all active duty force described in Scenario THREE.

5. Savings Associated with Retirement Pay Cost

This subsection presents and quantifies savings associated with Annual Retirement Pay Cost. A comparison will be made of the discounted retirement costs between the present TAR/SELRES force with that of the Scenario THREE force. The comparison will be made using an average annual cash outlay

required to fund the future retirement pay obligation. Retirement payments begin for a TAR upon retirement and begins for a SELRES at age 60. In this subsection it is assumed that all C-9 pilots retire with 20 years worth of military service and are entitled to retirement payments equalling 50% of Base Pay. Two further assumptions are made: (1) that the average life expectancy of a C-9 pilot is 72 years and (2) that C-9 pilots retire at age 42. Table 54 presents the individual Annual Retirement Payment Costs for both Lieutenant Commanders and Commanders based upon current base pay data [Ref. 4].

TABLE 54

ANNUAL RETIREMENT PAYMENTS
(IN DOLLARS)

	ANNUAL BASE PAY	ANNUAL RETIREMENT PAY
LIEUTENANT COMMANDERS	46,530.00	23,265.00
COMMANDERS	52,185.60	26,092.80

A C-9 pilot who is a Lieutenant will normally get promoted to Lieutenant Commander during his/her tenth year of military service and will have ten more years to serve, for retirement purposes, as a Lieutenant Commander if not promoted to Commander. A C-9 pilot who is a Lieutenant Commander will normally get promoted to Commander during his/her 16th year of military service and will have four more years to serve, for retirement purposes, as a Commander. For retirement purposes

it will be assumed that a linear relationship exists concerning promotions and retirements. This means that for each C-9 pilot who is promoted to the next higher rank, one C-9 pilot of that rank will retire. Table 55 shows the expected number of retirees who will retire annually by rank for the present method of C-9 pilot manning. Calculations in Table 55 assume that out of 227 Lieutenants, 172 (43 + 129) were promoted to Lieutenant Commander, and 55 (13 + 42) were promoted to Commander.

TABLE 55

EXPECTED NUMBER OF ANNUAL RETIREMENTS
LIEUTENANT COMMANDER AND
COMMANDER C-9 PILOTS
(PRESENT METHOD OF PILOT MANNING)

	NUMBER OF PILOTS	CALCULATIONS	PILOTS RETIRING ANNUALLY
TAR LIEUTENANT COMMANDERS	43	(43/10)	4.30
TAR COMMANDERS	13	(13/4)	3.25
SELRES LIEUTENANT COMMANDERS	129	(129/10)	12.90
SELRES COMMANDERS	42	(42/4)	10.50
TOTALS	227		30.95

As shown above in Table 55, the Navy can expect to retire a total of 30.95 C-9 pilots annually for which a retirement cost obligation is incurred. Table 56 shows the individual discounted (discount rate = 5%) retirement costs of the present method of TAR and SELRES C-9 pilot manning by

rank. For TAR C-9 pilots, 30 years worth of retirement payments (earned between ages 42 and 72) were discounted back 30 years. For SELRES C-9 pilots, 12 years worth of retirement payments (earned between ages 60 and 72) were discounted back 30 years. The 5% discount rate is arbitrary but is judged to approximate the current risk-free rate of return and inflation premium rate.

TABLE 56

INDIVIDUAL DISCOUNTED RETIREMENT COSTS FOR THE PRESENT METHOD OF C-9 PILOT MANNING (IN DOLLARS)

	DISCOUNTED RETIREMENT COSTS
TAR O4	357,629.58
TAR O5	401,098.52
SELRES O4	85,661.73
SELRES O5	96,073.69

Table 57 presents the Total Average Annual Retirement Costs of the present method of C-9 pilot manning which were determined by multiplying the individual discounted retirement costs from Table 56 by the expected number of Navy C-9 pilots who will retire annually from Table 55.

TABLE 57

TOTAL AVERAGE ANNUAL RETIREMENT COST FOR THE PRESENT METHOD OF C-9 PILOT MANNING (IN DOLLARS)

	CALCULATIONS	ANNUAL RETIREMENT COSTS
TAR O4	(357,629.58 x 4.30)	1,537,807
TAR O5	(401,098.52 x 3.25)	1,303,570
SELRES O4	(85,661.73 x 12.90)	1,105,036
SELRES O5	(96,073.69 x 10.50)	1,008,774
TOTAL		4,955,187

As shown in Table 57, the Navy incurs an average annual cost of $4,955,187 to meet its annual retirement payment obligation to both TAR and SELRES retirees.

Table 58 shows the expected number of retirees who will retire annually by rank for Scenario THREE.

TABLE 58

EXPECTED NUMBER OF ANNUAL RETIREMENTS LIEUTENANT COMMANDER AND COMMANDER C-9 PILOTS (SCENARIO THREE PILOT MANNING)

	NUMBER OF PILOTS	CALCULATIONS	PILOTS RETIRING ANNUALLY
LIEUTENANT COMMANDERS	134	(134/10)	13.40
COMMANDERS	41	(41/ 4)	10.25
TOTALS	175		23.65

As shown above in Table 58, the Navy can expect to retire a total of 23.65 C-9 pilots annually for which a retirement cost obligation is incurred for Scenario THREE manning. Table 59 shows the individual discounted retirement costs of Scenario THREE C-9 pilot manning by rank.

TABLE 59

INDIVIDUAL DISCOUNTED RETIREMENT COSTS FOR SCENARIO THREE C-9 PILOT MANNING (IN DOLLARS)

	DISCOUNTED RETIREMENT COSTS
LIEUTENANT COMMANDER	357,629.58
COMMANDER	401,098.52

Table 60 presents the Total Annual Retirement Cost of Scenario THREE C-9 pilot manning which was determined by multiplying the individual discounted retirement costs from Table 59 by the expected number of Navy C-9 pilots who will retire annually from Table 58.

TABLE 60

TOTAL AVERAGE ANNUAL RETIREMENT COST FOR SCENARIO THREE C-9 PILOT MANNING (IN DOLLARS)

	CALCULATIONS	ANNUAL RETIREMENT COSTS
LIEUTENANT COMMANDERS	(357,629.58 x 13.40)	4,792,236
COMMANDERS	(401,098.52 x 10.25)	4,111,260
TOTAL		8,903,496

As shown in Table 60, the Navy would incur an average annual cost of $8,903,496 to meet its annual retirement payment obligation for Scenario THREE manning.

Table 61 and Figure 30 show the relative Retirement Cost Savings of each rank that is obtained utilizing TAR and SELRES manning. Figure 31 also shows the Average Annual Retirement Cost Savings between the present method of TAR and SELRES manning and that of Scenario THREE.

TABLE 61

AVERAGE ANNUAL RETIREMENT COST SAVINGS
(IN DOLLARS)

	SCENARIO THREE FORCE	PRESENT FORCE	ANNUAL SAVINGS
LIEUTENANT COMMANDERS	4,792,236	2,642,843	2,149,393
COMMANDERS	4,111,260	2,312,344	1,798,916
TOTALS	8,903,496	4,955,187	3,948,309

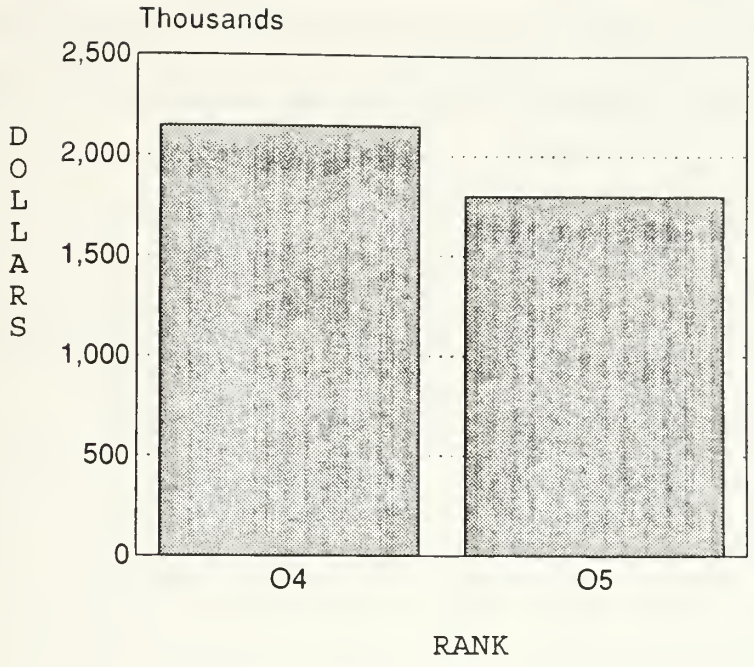

Figure 30, Average Annual Retirement Cost Savings by Rank

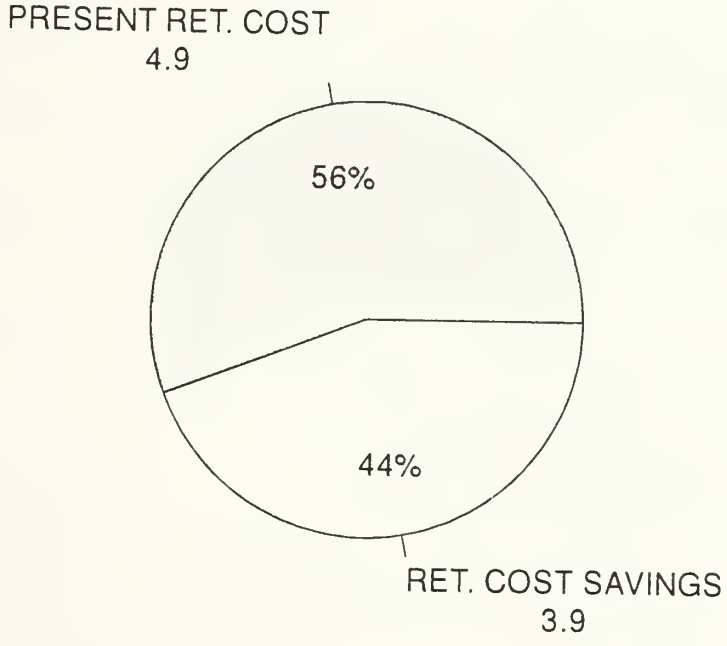

Figure 31, Average Annual Retirement Cost Savings Relative to Scenario THREE Cost
(DOLLARS IN MILLIONS)

In summary, the Navy's present C-9 pilot force realizes an Average Annual Retirement Cost Savings of four million dollars when compared to the all active duty force described in Scenario THREE.

B. AVERAGE ANNUAL AIRLINE FLIGHT TIME BENEFITS

In this section the Average Annual Flight Time Benefits which are gained through SELRES pilots who are also airline pilots is presented. The primary and most direct benefit to the Navy that is gained through an airline pilot's flight time is flight experience. A SELRES pilot's airline flight experience is brought directly into the Navy C-9 cockpit when an airline pilot flies a Navy C-9 aircraft.

1. Background

Both the Navy and the airline industry utilize a pilot's total accumulated flight time as one measure of pilot experience. An airline pilot's flight time is typically recorded after each and every flight and can broken down as follows:

1. Captain Flight Time
2. First Officer Flight Time
3. Second Officer Flight Time

An airline Captain is equivalent to a Navy Aircraft Commander (i.e., the pilot in command of the aircraft who can also fly the aircraft). An airline First Officer is equivalent to a Navy Co-pilot (i.e., the pilot who is second in command

of the aircraft who can also fly the aircraft). An airline Second Officer is equivalent to a Navy Flight Engineer. Both a Second Officer and a Flight Engineer are not in a position to fly the aircraft. A Navy Flight Engineer is an enlisted aircrewman who is not in line to upgrade to a Navy pilot where as an airline Second Officer will upgrade through First Officer and eventually Captain during the course of a career.

Throughout this section it is assumed that all airline related flight time is as either a Captain or First Officer since the exact flight position of each SELRES airline pilot is frequently changing. Also, time spent in the position of Second Officer is relatively small over the course of an airline career.

2. Presentation of Data

In this subsection, the data utilized to determine the Average Annual Airline Flight Time flown by a SELRES airline pilot is presented. Table 62 shows both the monthly and yearly hours of flight time flown by a typical airline pilot who flies with each major airline [Ref. 5:pp. 4-5]. The average across these individual airlines, also shown in Table 62, will be used as a representative figure in the following section.

TABLE 62

MAJOR AIRLINES
AVERAGE PILOT FLIGHT TIME
(IN HOURS)

AIRLINE	MONTHLY FLIGHT HOURS	YEARLY FLIGHT HOURS
AMERICAN	75	900
CONTINENTAL	83	996
DELTA	75	900
FEDERAL EXPRESS	84	1008
FLYING TIGERS	84	1008
NORTHWEST	75	900
TWA	80	960
UNITED	80	1020
US AIR	80	960
TOTAL	721	8652
AVERAGES	80.1	961.3

Table 63 and Figure 32 show the relative proportion of SELRES pilots who are airline pilots within the C-9 community.

TABLE 63

TAR AND SELRES C-9 PILOTS

	AIRLINE PILOTS	NON-AIRLINE PILOTS	TOTAL C-9 PILOTS
TAR	0	95	95
SELRES	186	49	235
TOTALS	186	144	330

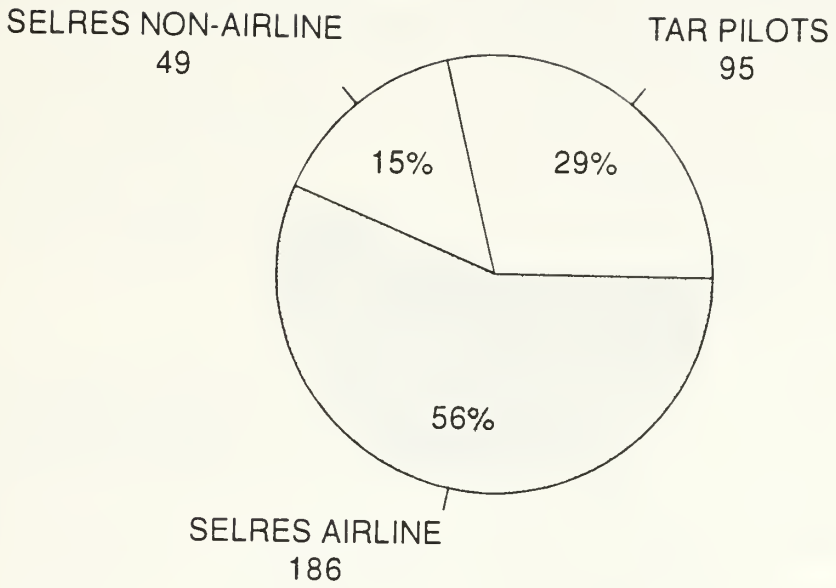

Figure 32, TAR and SELRES C-9 Pilots

The data shown above was obtained from the Squadron Questionnaire Data which was presented in Table 12 of Chapter III. The data presented in this subsection will be used in the next subsection to determine the Average Annual Airline Flight Time flown by all SELRES C-9 pilots who are airline pilots.

3. Determination of the Average Annual Airline Flight Time Flown by all SELRES C-9 Pilots who are Airline Pilots

In this subsection the Average Annual Airline Flight Time flown by all SELRES C-9 pilots who are airline pilots is determined. By knowing the Average Annual Airline Flight Time

flown by the typical airline pilot and the number of SELRES C-9 pilots who are also airline pilots, the Average Annual Airline Flight Time (AAAFT) flown by all SELRES C-9 pilots who are airline pilots can be determined as follows:

AAAFT = (186 SELRES C-9 Pilots who are Airline Pilots) x
(961.3 Airline Flight Hours/Airline Pilot)
= 178,802 Airline Flight Hours

The 178,802 Airline Flight Hours calculated above must be adjusted to a Navy flight time equivalent since airline flight time includes aircraft start-up and taxi time. The Navy records its flight time only from takeoff to landing. Within the airline industry, a factor of 20% usually typifies the conversion value used to standardize military with civilian flight time (i.e., increase military flight time by 20% to obtain an equivalent civilian flight time value). The military flight time equivalent of the Average Annual Airline Flight Hours flown by SELRES C-9 pilots who are airline pilots is calculated as follows:

178,802 Airline Flight Hrs. x .8 = 143,042 Navy Flight Hrs.

The 143,042 Flight Hours calculated above can be looked upon as flight experience which is brought directly into the Navy C-9 cockpit at a cost to the Navy of zero.

Table 1 of Chapter I showed that Fleet Logistics Support Wing flew a total of 39,395 flight hours during CY 1992. Figure 23 shows the relative contribution of the airline flight hours flown by SELRES airline pilots in comparison to the total Navy flight hours flown by Fleet Logistic Support Wing during CY 1992.

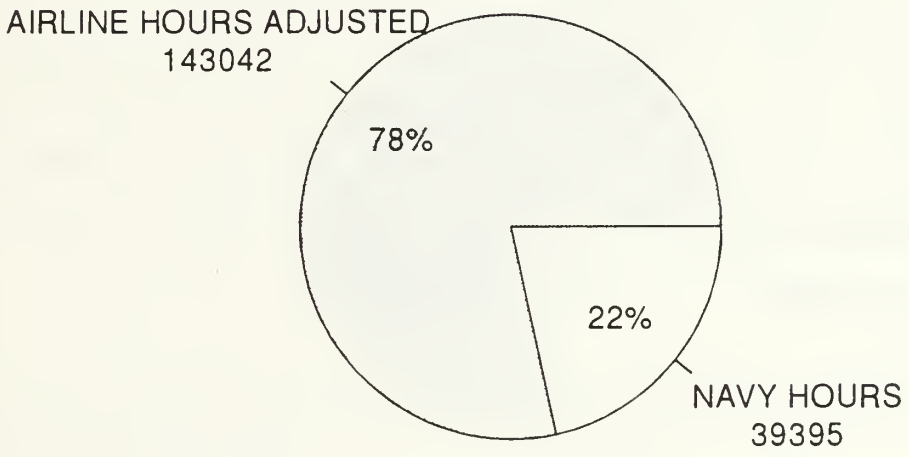

Figure 33, Flight Hour Comparison between Navy and Airline Flight Hours

As shown in Figure 33, the Navy gains a 363% increase in pilot flight experience (i.e., the direct benefit), as measured by flight hours, that is brought directly into the Navy C-9 aircraft at a cost to the Navy of zero.

The pilot flight experience benefit gained through the SELRES pilots who are airline pilots is not only obtained at

a cost of zero but is also obtained without any additional demands on the C-9 community including its aircraft assets. The Navy C-9 community is unable to afford, at its present level of funding, personnel and aircraft assets to fly an additional 143,042 C-9 flight hours per year.

C. SUMMARY OF CHAPTER IV

In this chapter the Total Average Annual Cost Savings associated with Pay and Allowances, excluding Base Pay, between the present TAR/SELRES C-9 pilot force and that of Scenario THREE was determined to be 7.3 million dollars per year. Specific costs and savings categories are summarized in Table 64. Figure 34 also shows the relative savings between the present method of TAR and SELRES manning and that of Scenario THREE.

TABLE 64

TOTAL COST SAVINGS ASSOCIATED WITH
PAY AND ALLOWANCES
(IN DOLLARS)

SAVINGS CATEGORY	AMOUNT OF SAVINGS
BASIC ALLOWANCE FOR QUARTERS	1,421,777
VARIABLE HOUSING ALLOWANCE	735,587
BASIC ALLOWANCE FOR SUBSISTENCE	311,267
AVIATION CAREER INCENTIVE PAY	894,685
RETIREMENT PAY	3,948,309
TOTAL	7,311,625

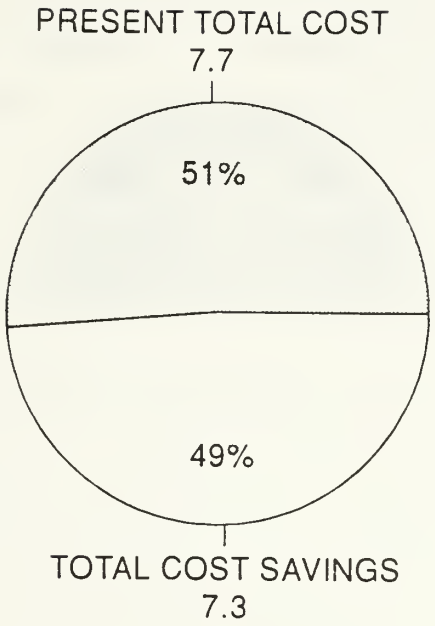

Figure 34, Average Annual Total Cost Savings, Not including Base Pay, Relative to Scenario THREE Cost
(DOLLARS IN MILLIONS)

Also in this chapter, the Average Annual Airline Flight Time Benefit which is gained through the SELRES pilots who are airline pilots was determined to be equivalent to 143,042 Navy Flight Hours. These flight hours represented an increase of 363% over the total Navy flight hours flown by Fleet Logistics Support Wing during Calendar Year 1992. This increase in

flight experience is brought directly into the Navy C-9 cockpit at zero cost to the Navy and represents a tremendous benefit to operational capability and flight safety.

The next chapter, Chapter V, will present a review of Chapters I - IV, a summary of pay and allowances cost savings and pilot flight time benefits, recommendations for further study, and conclusions pertaining to this thesis.

V. CHAPTER REVIEW, SUMMARY OF COST SAVINGS AND FLIGHT TIME BENEFITS, RECOMMENDATIONS FOR FURTHER STUDY AND CONCLUSIONS

The first three sections of this chapter will present a review of all previous chapters, a summary of pay and allowances cost savings and pilot flight time benefits, recommendations for further study, and conclusions pertaining to this thesis, respectively. The fourth and final section of this chapter and thesis will present the conclusions to this study.

A. REVIEW OF CHAPTERS PRESENTED

This section reviews the first four chapters. Chapter I served as an introduction. Some background information about the Naval Reserve's C-9 community, C-9 pilot manning, and C-9 aircraft scheduling was presented. The primary and secondary research questions were stated and the limitations of this study were presented.

In Chapter II the Average Annual Base Pay Cost of a Selective Reserve pilot was determined. A SELRES Days of Pay Model was developed and utilized to determine the average annual Days of Pay earned by a SELRES pilot during a complete year of affiliation with a C-9 squadron. The input for the model was Days Flown and the output of the model was Days of Pay. The average annual Days of Pay was then multiplied by the pilot's Average Daily Base Pay to determine the Average

Annual Base Pay Cost of a SELRES C-9 pilot. These average values were utilized in Chapter III to determine the Average Annual Base Pay Cost Savings pertaining to TAR and SELRES pilot manning within the C-9 community.

In Chapter III the Average Annual Base Pay Cost Savings associated with SELRES C-9 pilots was determined for three different hypothetical C-9 pilot manning scenarios. First, the Average Annual Base Pay Costs for each of three possible alternative C-9 pilot manning scenarios was calculated (i.e., an all active duty force, a TAR manning mix force, and a 10% reduction to the TAR manning mix force). These costs were compared to the Average Annual Base Pay Cost of the present method of TAR and SELRES C-9 pilot manning. The Average Annual Base Pay Cost Savings ranged from 4.7 to 6.3 million dollars. The Average Annual Base Pay Cost Savings and relative percent savings are summarized in Table 65 for the three different C-9 pilot manning scenarios which were first presented in Chapter III.

TABLE 65

SUMMARY OF AVERAGE ANNUAL BASE PAY COST SAVINGS
OF PRESENT TAR AND SELRES FORCE
WHEN COMPARED TO ALTERNATIVE FORCES
(MILLIONS OF DOLLARS)

	SCENARIO ONE	SCENARIO TWO	SCENARIO THREE
SAVINGS	6.3	6.0	4.7
PERCENT SAVINGS	.45	.44	.38

The number of active duty pilots that could be obtained for the same Average Annual Base Pay Cost as the present TAR/SELRES force was determined to be 184. Although the Average Annual Base Pay Cost would be the same, a reduction of this magnitude would result in the loss of 146 (i.e., 44.2%) highly skilled, trained, and experienced C-9 pilots, and would severely reduce the C-9 community's ability to perform its mission.

In Chapter IV the Average Annual Cost Savings associated with Pay and Allowances, excluding Base Pay, between the present TAR/SELRES C-9 pilot force and that of Scenario THREE was determined to be 7.3 million dollars per year. Specific costs and savings categories were first summarized in Chapter IV and are presented again in Table 66.

TABLE 66

AVERAGE ANNUAL COST SAVINGS
ASSOCIATED WITH PAY AND ALLOWANCES
FOR PRESENT TAR/SELRES FORCE
WHEN COMPARED TO SCENARIO THREE FORCE
(IN DOLLARS)

SAVINGS CATEGORY	AMOUNT OF SAVINGS
BASIC ALLOWANCE FOR QUARTERS	1,421,777
VARIABLE HOUSING ALLOWANCE	735,587
BASIC ALLOWANCE FOR SUBSISTENCE	311,267
AVIATION CAREER INCENTIVE PAY	894,685
RETIREMENT PAY	3,948,309
TOTAL	7,311,625

Chapter IV also documented pilot experience benefits from the present TAR and SELRES force. The Average Annual Airline Pilot Flight Time Benefit which is gained through the SELRES C-9 pilots who are airline pilots was determined to be equivalent to 143,042 Navy Flight Hours. These flight hours represented an increase of 363% over the total Navy flight hours flown by Fleet Logistics Support Wing during Calendar Year 1992. This increase in flight experience is brought directly into the Navy C-9 cockpit at a cost to the Navy of zero and represents a tremendous benefit to operational capability and flight safety.

B. SUMMARY OF AVERAGE ANNUAL COST SAVINGS

This section presents the Total Average Annual Cost Savings associated with pay and allowances that were investigated in this study. Table 67 presents the Total

Average Annual Cost Savings, by cost category, that is obtained utilizing TAR and SELRES manning. Data in Table 67 was obtained by combining data from Tables 25 and 66. Figure 35 also shows the total cost savings between the present method of TAR and SELRES manning and that of Scenario THREE.

TABLE 67

TOTAL COST SAVINGS BETWEEN PRESENT FORCE AND THAT OF SCENARIO THREE (IN DOLLARS)

	SCENARIO THREE FORCE	PRESENT FORCE	SAVINGS
BASE PAY	12,270,393	7,612,329	4,658,064
BAQ	2,273,742	851,965	1,421,777
VHA	1,081,542	345,955	735,587
BAS	496,786	185,519	311,267
ACIP	2,300,610	1,405,925	894,685
RETIREMENT	8,903,496	4,955,187	3,948,309
TOTALS	27,326,569	15,356,880	11,969,689

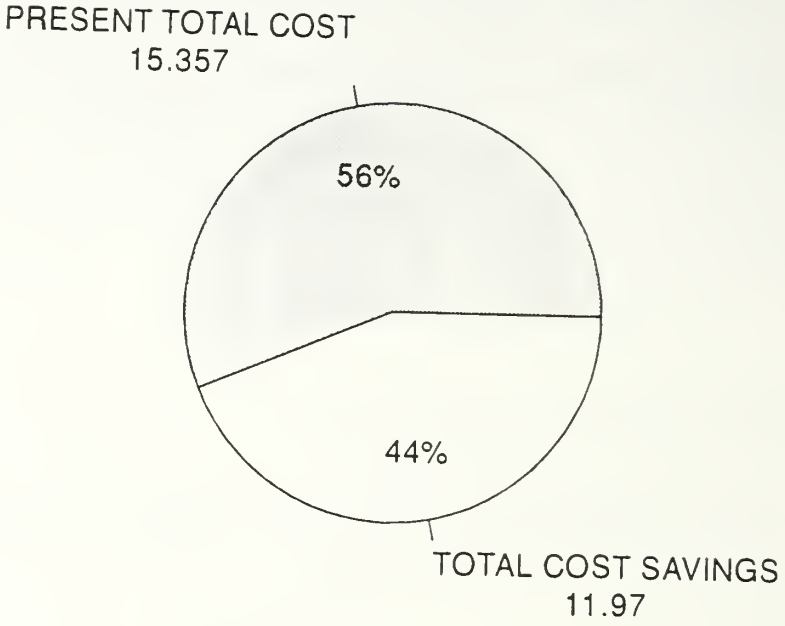

Figure 35, Average Annual Total Cost Savings Relative to Scenario THREE Cost (DOLLARS IN MILLIONS)

Table 68 presents an average cost per pilot comparison between the present method of C-9 pilot manning and that of Scenario THREE. Figure 36 shows the relative average annual cost savings per pilot between the present method of TAR and SELRES manning and that of Scenario THREE.

TABLE 68

COMPARISON OF AVERAGE COST PER PILOT BETWEEN THE PRESENT MANNING FORCE AND SCENARIO THREE (IN DOLLARS)

	NUMBER OF PILOTS	TOTAL AVERAGE ANNUAL COST	AVERAGE COST PER PILOT
PRESENT FORCE	330	15,356,880	46,536
SCENARIO THREE FORCE	297	27,326,569	92,009

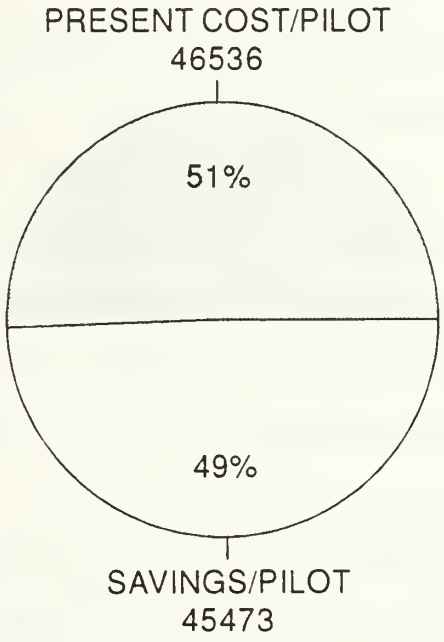

Figure 36, Average Annual Cost per Pilot Comparison (IN DOLLARS)

As shown in Table 68 and Figure 36 the Navy's present average annual cost per C-9 pilot is about 50% less than the cost of a C-9 pilot using Scenario THREE manning.

C. RECOMMENDATIONS OF AREAS FOR FURTHER STUDY

This section suggests some areas where further research concerning cost savings and benefits associated with Navy C-9 pilots could be done. As indicated in Section C of Chapter I (i.e., Limitations of Study), this thesis did not present cost savings and benefits associated with medical, dental, and moving expenses. All three of these additional cost categories would likely represent significant cost savings when comparing the present C-9 pilot force to that of an all active duty force.

Cost savings related to medical and dental expenses result since a SELRES officer's family is not entitled to medical or dental benefits. Only in the event of full mobilization (i.e., in time of war) where a SELRES would be placed on active duty would the family of a SELRES be entitled to Navy medical and dental benefits. SELRES C-9 pilots are entitled to medical and dental benefits only when they are in a duty status.

Cost savings related to moving expenses result since a SELRES can, and usually does, remain with a single squadron throughout his/her career as a C-9 pilot. If a SELRES C-9 pilot does transfer to another C-9 squadron he/she does so at

his/her own expense. In contrast, active duty pilots are subject to Permanent Change of Station (PCS) moves approximately every three years resulting in a major annual expense to the military.

The above mentioned cost savings categories are areas where further research could be performed. Further study of these cost categories would result in a significant contribution to the subject of cost savings and benefits obtained through the employment of SELRES pilots within the C-9 community of the Naval Air Reserve.

D. CONCLUSIONS OF THIS STUDY

This study has shown that if a Navy C-9 community is to exist, the present method of TAR and SELRES manning is of great benefit to the Navy and the American taxpayer. The Navy saves approximately 7.3 million dollars per year (not counting medical, dental and moving expenses) by employing part-time reserve C-9 pilots instead of a comparable all active duty force. In addition to the dollar savings, the Navy's Fleet Logistics Support Wing gets a 363% annual increase in pilot flight experience obtained through SELRES pilots who are airline pilots. This airline pilot experience is brought directly into the C-9 cockpit at a cost to the Navy of zero and represents a tremendous benefit to operational capability, training, and flight safety. In essence the Navy gets more (i.e., a greater number of pilots who are better trained)

for less (i.e., it costs millions less per year) through the present method of TAR and SELRES C-9 pilot manning than a comparable all active duty force.

LIST OF REFERENCES

1. Fleet Logistics Support Wing, *Command History*, 1992.

2. Green, W., Swanborough, G., and Mowinski, J., *Modern Commercial Aircraft*, Salamander Book Ltd., 1987.

3. *C-9B Natops Flight Manual*, Naval Air Systems Command, 1987.

4. *The 1993 Navy Pay Chart*, United States Navy, 1993.

5. *1992 - 1993 Pilot Salary Survey*, Future Aviation Professionals of America, 1992.

6. *Military Pay and Allowances Entitlements Manual*, Department of Defense, 1993.

BIBLIOGRAPHY

Anderson, D.R., *Management Science*, West Publishing, 1991.

Anderson, L.G., *Benefit-cost Analysis: A Practical Guide*, Lexington Books, 1977.

Dasgupta, A.K., *Cost-benefit Analysis: Theory and Practice*, London: Macmillan & Company, 1972.

Deakin and Maher, *Cost Accounting*, Irwin, Inc., 1991.

Layard, R., *Cost-benefit Analysis*, Baltimore: Penguin, 1974.

Rayburn, L.G., *Cost Accounting*, Irwin, Inc., *1993*.

Sassone, P.G., *Cost-benefit Analysis: A Handbook, New York, 1978*.

Sugden, R., *The Principles of Practical Cost-benefit Analysis*, Oxford University Press, 1978.

Weiss and Hassett, *Introductory Statistics*, Addison-Wesley Publishing, 1991.

INITIAL DISTRIBUTION LIST

1.	Defense Technical Information Center Cameron Station Alexandria, VA 22304-6145	2
2.	Library, Code 052 Naval Postgraduate School Monterey, CA 93943-5002	2
3.	Commander Fleet Logistics Support Wing Naval Air Station Dallas, TX 75211-9513	3
4.	Commander Naval Air Reserve Forces 4400 Dauphine Street New Orleans, LA 70146-5000	3
5.	LCDR Chris Mullarkey, USNR VR-62 Naval Air Facility Detroit Mt. Clemens, MI 48045-5008	3
6.	Professor Doug Moses Code AS/MO Department of Administrative Sciences Naval Postgraduate School Monterey, CA 93943-5000	1
7.	LCDR Jeff Nevels, SC, USNR Code AS/NE Department of Administrative Sciences Naval Postgraduate School Monterey, CA 93943-5000	1